

# MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XXXVII. No. 23  
WEEKLY.

BALTIMORE, JUNE 28, 1900.

\$4.00 A YEAR.  
SINGLE COPIES, 10 CENTS.

## Manufacturers' Record.

PUBLISHED EVERY THURSDAY BY THE  
Manufacturers' Record Publishing Co.  
RICHARD H. EDMONDS, President.  
OFFICE: MANUFACTURERS' RECORD BUILDING,  
BALTIMORE.

RICHARD H. EDMONDS,  
Editor and General Manager.

THOMAS P. GRASTY,  
General Staff Correspondent.

SUBSCRIPTION, - - - - \$4.00 a Year.  
TO FOREIGN COUNTRIES, - - 26s. 6d. a Year.

BALTIMORE, JUNE 28, 1900.

### A Forecast of the World's Iron and Steel Trade by Mr. Edward Atkinson.

Ten years ago Edward Atkinson contributed to the Manufacturers' Record a very comprehensive paper forecasting the development of the iron interests of the world. Mr. Atkinson pointed out that the accelerating rate of consumption of iron throughout the world indicated that in 1900 the total consumptive requirements of the world would demand 40,000,000 tons of pig-iron, of which he estimated that the United States would have to furnish about 14,000,000 tons. In this week's issue we publish another elaborate paper by Mr. Atkinson, in which the fulfillment of his predictions of ten years ago is pointed out and a forecast of the coming ten given. The domestic consumption of iron in the United States in 1899 is estimated by Mr. Atkinson at 375 pounds, and the consumption for 1900 at 400 pounds per capita. Appreciating the danger of indulging in prophecy, Mr. Atkinson does not undertake to make definite predictions, but lays down now some striking suggestions regarding the possible consumption of iron in 1910.

The increasing demand, according to Mr. Atkinson, will come from the construction of about 100,000 miles of railway during the next fifteen years, from housebuilding and construction, from the extension of the electric railway system, of which no measure can yet be computed; from the increased use of iron and steel in all arts which follow the extension of the railway, and in shipbuilding when the supremacy of this country in that has been established. "The prices of iron," says Mr. Atkinson, "have doubtless lately been pushed higher than normal conditions will sustain, but at the lessened prices, which will still yield very large profits, we may soon witness an active demand resumed, while at the lessened prices the opportunity for export will be increased. During the next ten years, with an average increase in population exceeding 2,000,000 a year, at 400 pounds per head there will be an increased consumption of 400,000 net tons a year, and if the law accelerating consumption continues in the future as it has in the past, coupled with heavy and increasing exports, it is doubtful if an average increase of 1,000,000 tons per

annum in this country for the next ten years will suffice to supply the demand."

Referring to his estimate of 100,000 miles of new railroad construction in the next fifteen years, Mr. Atkinson says:

We have, it is true, a sufficient number of through lines from east to west, but the connecting lines and the necessary increase in the railway service of the South and Southwest, especially in Texas, cannot fail to carry construction nearly, if not quite, to an average of 10,000 miles a year from 1901 to 1910, inclusive. How much the development of electric tramways will be no man can tell. If we compute the lighter demands of the regular railway service, can the two combined be less than equal to an average of 10,000 miles of regular railways a year? Every mile requires 100 tons of iron and steel for its track and equipment, and it means a demand, in addition to the present demand, of 1,000,000 tons of iron a year for the extension of the railway service only.

Again, if the logic of events justified the prediction made in 1890 of an increase in the world's demand for iron from 25,000,000 tons to 40,000,000 tons by 1900, will not the demand in 1910 require a supply of at least 55,000,000 tons, probably 60,000,000?

If the consumption of iron per capita in this country increased, as it has, from 200 pounds per head in 1880 to 300 pounds per head in 1890 and to 400 pounds per head in 1900, will not the same logic of events require 500 pounds per head in 1910, when our population will exceed 90,000,000, domestic consumption calling for over 22,000,000 tons of iron? But the increased dependence of other countries will make that supply insufficient. If the world's demand for iron in 1910 will surely require a supply of 55,000,000 and probably 60,000,000 tons, from what deposits of iron ores and coal will the increased supply be derived? In view of the present conditions of Europe, can any considerable proportion of the increase be derived from the mines and works of Great Britain, Spain, Sweden, Belgium and Germany? Can the ores and coal which are known to exist in China and in Africa begin to meet the increasing demands of China and Africa in the next ten years? Can Russia supply her own increasing demands? If not, who will make 60,000,000 tons of iron ten years hence, and in what proportion?

In 1878 the proportions of the commercial product were:

Great Britain.....	45.20 per cent.
United States.....	16.30 "
Germany and Belgium.....	15.21 "
France.....	10.04 "

In 1889 the proportions were:

Great Britain.....	33.16 per cent.
United States.....	30.57 "
Germany and Belgium.....	17.64 "
France.....	06.93 "

Will it be possible for the world to get a supply of 55,000,000 tons ten years hence without at least 50 per cent. being derived from the mines and works of this country?

Then is not the problem now presented to the people of this country soon to become urgent, how to double the present product of iron and steel by carrying it from 14,000,000 tons in the present year to at least 28,000,000 tons in the year 1910, of which not less than 22,000,000 tons will be required for domestic consumption?

With these somewhat startling questions I leave the subject to the logic of events.

These startling figures and questions presented by Mr. Atkinson are exceedingly timely, in view of the pessimistic feeling which has recently swept over the country by reason of a temporary halt in the iron trade. The Manufacturers' Record by no means agrees with all of Mr. Atkinson's economic theories, and it strongly condemns

his anti-expansion efforts. But few men of this day have foreseen more clearly than he coming industrial manifestations or have explained them more lucidly. Studying these figures in the light of the past, there is every reason for believing that the marvelous progress in iron production and consumption which he indicates will be fully realized during the next decade. In view of these facts, how insignificant is the temporary lull in the consumptive demand for iron and steel, for as surely as day succeeds night must there come an increasing demand for iron and steel which shall tax our abilities to produce. The world is hungry for iron, coal and steel, and, though it may not year in and year out digest with the same avidity, its appetite is never appeased, and steadily expands from year to year, and ten years hence it may consume, as Mr. Atkinson indicates, at least 55,000,000 tons of pig-iron, or possibly 60,000,000 tons. In these facts of world-wide interest there is found a basis to justify the continued profitable expansion of the iron and steel interests of our whole country, North, West and South.

### The Eastern Situation.

The American-Asiatic Association has sent to the President of the United States the following memorial regarding the situation in China:

The undersigned members of the American-Asiatic Association, interested as manufacturers, merchants and otherwise, in the maintenance of the treaty rights of the United States in China, and in the preservation of the open door for American trade in that empire, would most respectfully submit, on their own behalf and in answer to the appeal of their affiliated organization, the American Association of China, that the perils to which the lives and interests of American citizens are now exposed in some of the northern provinces of China demand the prompt and vigorous application of adequate force.

While fully recognizing the fact that you have given convincing evidence that you are no less profoundly impressed than ourselves with the requirements of the situation, we beg to place this association on record as favoring such action in concert with other powers whose interests and purposes in China are similar to those of the United States as may most surely and effectually conduce to the restoration of order in the disturbed provinces of China, and to frank acceptance by the government at Peking of the responsibilities imposed on it by existing treaties with this and other nations.

Among the signers of the memorial are cotton manufacturers of Alabama, North Carolina and South Carolina. They are evidently alive to the importance of a settlement once and for all of the difficulties in China. Vitally interested in the stability of political and social institutions in the Eastern empire as one of the best foreign markets for Southern cotton goods, they have not hesitated to point to the policy which may be expected to insure such stability, a union of the forces of Western civilization against the possibility of attempts of Eastern civilization to contest its advance. That the United States government will not be slow to do its part in this task is indicated by

the promptness with which the State, War and Navy departments have acted at the present crisis. It is not at all unlikely, too, that the practical statesmanship which placed this country in possession of the Philippines, giving the United States a basis of operations against the mainland of the East, will be more fully explained by the events of the next few weeks in China.

### For the Benefit of Southern Cotton-Growers.

The Manufacturers' Record has for years claimed that the greatest questions before Southern cotton-growers are how to produce their cotton at the lowest cost and how to eliminate the many unnecessary charges between the grower and the mill? The solution of these questions is to be found in raising at home the food supplies for man and beast in order that the cotton may to a large extent be a surplus crop, then in so improving the ginning, compressing and handling as to save the wastage and stealage there, and then to establish bonded warehouses to make it unnecessary to force the cotton upon the market as soon as picked. All three of these things are being gradually worked out. Every year sees the Southern farmer less dependent upon the West for corn and bacon, and thus the actual cost of cotton-growing is being gradually reduced. The warehouse system is making good progress, and especially in Georgia, where the bankers of the State are taking a very active part in its development. And the cost of compressing and handling is being reduced by the introduction of the round-bale system, which is forcing the square-bale people to make many improvements. That the position of the Manufacturers' Record on this question, viz., that the development of the round-bale system is to the benefit of the Southern farmers, is strongly shown in an editorial in the Cotton Planters' Journal of Memphis, a representative paper of the cotton-growers of the South. The Journal republishes from the Southern Farm Gazette of Mississippi the following:

Some are very much opposed to the round-bale system of baling cotton that will be inaugurated by the new oil mill at Starkville. The mill will put in a round-bale press, and also a double-box square-bale steam press along by the side of it, so as to feed the cotton from six gins to either press. This is, we believe, the right way to go about it. If the round bale brings a better price it can soon be proved. If it does not bring a better price it need not be used. Perhaps it will stimulate square-bale cotton buyers, who are generally much opposed to the new system, to give higher prices. This, in turn, will force the round-bale people to bid up in order to hold their own, and thus the town and country will be benefited by extra competition. As to whether the new system has inherent merit, that can readily be proved where both presses go in together and are tested side by side without that prejudice engendered in the case of parties running one system to the exclusion of the other. We believe the new system well worthy of trial. There is lots of room for improvement and saving in the handling and shipping of cotton. It now costs more than a cent and one-half a pound to move cotton from the interior towns to Liverpool. Harry



Hammond in the department of agriculture publication, *The Cotton Plant*, says: "A conservative estimate places the saving on compressing, handling, insurance and transportation at \$4.25 a bale." A farmer should certainly welcome every improvement that shortens the distance or lessens the cost between him and the consumer of his products. A prejudice against such improvements will certainly be as blind as that of the English people who rose in mobs to destroy the power looms and spinning machinery.

And then commenting on this the *Planters' Journal* adds:

Judging from what has transpired in localities where round-bale plants have been established, the prophecy of farmers getting higher prices for their cotton, made by the *Gazette*, will undoubtedly be realized, as in every community where the compress monopolists and their "cohorts" have not succeeded in "keeping out" the round-bale press higher prices have been realized by the planter of cotton.

Last season at some points the square-bale buyers became so enraged at the successful operation of the presses, which they had so often declared failures, that as much as one cent per pound above the market price was paid for square bales in order that they might check the wave of popular feeling which was being extended the new system.

This new system of baling cotton has caused much criticism of a very unfavorable nature to be heaped upon it, but in every case it has emanated from the owners of compresses, who see in its introduction and successful operation their finish.

Cotton commission merchants, shedmen, samplers, insurance and transportation men have all attempted to cry down the new system, but without success. It is here to stay, and as long as it continues to prove itself a money-saver to the cotton producer, as it has in the past, the number of plants using it will continue to increase rapidly.

### The Iron-Trade Outlook.

In their weekly market report Rogers, Brown & Co. suggest a few facts regarding the iron trade which should be given due consideration. Discussing the situation they say:

Only the voice of the pessimist is heard in the land. Let us lift up a cheerful note, for it's about time. The older men in the trade are not needing a tonic to steady their nerves, but there are some beginners, and a brand-new element in the situation, that watches the tapes and shudders at dreadful news. The shivers that are sent through Wall street are cabled over the waters and frighten the timid in Germany and Great Britain. For the first time we are accorded the honor of setting the pace for the world. Let us see if there is anything wrong with the following propositions:

First—The best good of the trade has called for an adjustment of prices to a normal level. Makers of pig-iron at least desire this adjustment to be prompt rather than protracted. They have set apart the whole summer for it, but at the present rate of progress it will not take many weeks longer.

Second—The American iron industry is the soundest in the world. No one now denies that in natural resources and in plant we are impregnable. The industry has stood fire, and well-managed concerns prospered under the hardest conditions ever known in any country. The readjustment to normal values, therefore, is not feared, except by the ill-managed, badly-located or worn-out plants, and these are a small factor.

Third—Production of iron the world over is less at this moment than consumption. This will be doubted, but no one who takes pains to keep informed will attempt to disprove it.

Fourth—Every dollar per ton further decline in pig-iron will cut off 1,000,000 tons of the 15,000,000 tons current annual production. How many million tons can be spared if the world's markets are short now?

Fifth—The entire world's stocks of pig-iron at the moment are less than the stock in Great Britain and less than the stock in the United States four years ago, when consumption was running 30 per cent. under present rate.

Sixth—Curtalement of the world's demands for iron and steel means distinct backward steps in civilization and progress. Those whose nerves have not been shattered by the tape believe that if there is war more iron than ever will be wanted, and a still greater proportion from this country. If there is peace there will be development in China, South Africa, the Philippines, and even such worn-out countries as America, Great Britain and Germany will have their share.

If a level-headed optimist were really loose at this time he could add indefinitely to the above schedule of facts, none of which are new, but which are forgotten in the eagerness for bad news.

We venture the suggestion that the tens of thousands of buyers of materials who are scraping the bottoms lest they may be caught with a few tons of stuff over on the wrong side of the market will find that somewhere between now and August 1 they will be overstaying their game.

### Business Prosperity an Essential Foundation.

The New York Commercial, which generally has the faculty of stating a thing in the right way, replying to a criticism about laying too much stress on "business prosperity," says:

We are afraid that our contemporary sets altogether too little store by business prosperity. There is nothing like business prosperity for a soil from which all national, as well as individual, virtues may be expected most luxuriantly to sprout. It is the beginning of all things for secure national life. The fact that a country is enjoying a uniform and almost overwhelming business prosperity is a sign not only of the enterprise of the people, but of their profound intelligence, their unshakable integrity and the possession of that temperamental poise which betrays them into no rashness and satisfies them with no mere theory. We believe that as long as business prosperity remains at its present high tide our neighbor can tuck himself in his little bed every night and surrender up to peaceful dreams, never fearing that the bombs of anarchy will make a blood-red dawn by midnight or the bugles of jingoism call him forth even in slumber's drapery to crush the wide earth before sunrise. He should be assured that the intelligence which has brought us through the thick night of business adversity, such as we had but four short years ago, and piloted us to this noonday peak in the blinding golden light of financial, industrial and social prosperity, upon which we now stand, is good to knock into impalpable smithereens the foundations of your earnest but bogey-born fears.

The Commercial is right. Business prosperity is the foundation for all things. Without it crime increases and religion and education decline. Take any section or any country where declining business over a long period brings its decrease of employment, and we find a steady lowering of the moral standard, crimes increase and schools and churches cease to thrive. On the other hand, where there is business prosperity, where employment is abundant, the devil finds few idle brains wherein to set up his workshop. Business prosperity means happy homes and an increase in all educational and religious interests. But strange to say, every now and then some carping critic talks as though "business prosperity" was of little importance compared to other things, whereas it is the foundation on which the higher things of civilization must be built.

### Our Industrial Supremacy and Its Effect.

The Philadelphia Press, in commenting on the decline in iron and steel business in Germany by reason of the fear of American competition, says:

German ores and coal are poor; German labor, while cheap, is not efficient. Nothing saves German industry but high technical skill. At this point, with better coal, coke and ore in this country, our technical education is beginning to make itself felt. Germany makes about one-fifth of the world's pig-iron. No technical skill can stand competition with our natural resources, efficient labor, equal technical skill and greater energy and enterprise. In the new modern warfare, in which nations destroy each other's industries, Germany appears likely to be the first victim of our capacity to undersell the world.

The influx of French-Canadians into the mill centers of New England, which has done so much toward changing the character of that section's population, has continued so long that it attracts

but little attention. The New York Evening Post, however, notes that in Connecticut and Rhode Island mills Greeks are being employed, while in Fall River mills preference is being given to Portuguese and Poles, who have been arriving there quite rapidly during the past year. These additions to New England's population can hardly be regarded as promising much relief from the troubles which are periodically visited upon the textile industry there.

### Waste of Politics.

The Times-Herald of Dallas, Texas, quoting the recent letter of Mr. J. C. Roberts of Bremond, Texas, published in the *Manufacturers' Record*, on the evil effects of politicians, says:

Mr. Roberts is perhaps a little too radical in some of his assertions, and recent developments in connection with the oil company's case have made his statement in that regard slightly erroneous, but with those two corrections his letter is a vigorous presentation of some vital truths. There's no way of estimating the amount of damages the demagogic politician does to Texas every year. Aside from the fact that he keeps foreign capital frightened away, the politician keeps home affairs in such a state of turbulence and turmoil that serious injury is done to all lines of business. Almost this entire year will be devoted to politics in Texas. In Dallas we first had a city election which began with the new year and lasted until April; then we had a hot primary campaign and election for county officers, with a portion of a senatorial fight thrown in for good measure. Now that the primaries are over, other tickets are to be placed in the field and the struggle for county and State offices will continue until after the November election. To this will be added what promises to be an exciting national contest. So much time will be given to politics that little attention can be paid other things. And thus it is all over the State and all over the South. At the annual meeting of Southern cotton spinners, held in Charlotte, S. C., last month, it was unanimously decided that the time had come when the business men of the South should dictate to the politicians, and not permit the politicians to rule or ruin simply for their own personal greed and gain. The cotton-spinners' decision is a wise one, and all industries of the South should follow this example. The demagogic politician must be left alone to bark to empty benches.

The prospect in Texas of almost interminable politics, local, State or national, is but a segment of the general outlook at present. There is no valid excuse for such a prospect save the wasteful, demoralizing impulse of most politicians, the desire of somebody to live at the public expense by holding office or by using office for gain. The public expense does not necessarily imply direct taxation, for it frequently means a much heavier burden upon the community born in assaults upon the influences which contributed directly to material development. The outlook may be changed and changed radically for the better if every Southern newspaper shall place at the head of its editorial columns and keep it there for the next six months the text, "The demagogic politician must be left alone to bark to empty benches," and by strictly living up to that text.

The politician lives, moves and has his being in the notoriety given him by the public press. Many newspapers which would charge the stiffest advertising rates for the announcement of an industrial or financial undertaking, which means an increase of population, business and general advance, voluntarily present the freedom of their columns to an advertisement of the politician, the greatest curse of any community. This curious contradiction in American journalism has its explanations, of course. Many newspapers live, move and have their being solely in the official advertising at inflated rates, for which the public pays, be-

stowed upon them by the politician in return for the free reading notices he has been given. This condition saps the efficiency of legitimate newspapers. If they would only consider the matter from a business standpoint they could readily reverse the condition to their own betterment. Let the legitimate newspapers of any State agree to bar from their columns, except at advertising rates, any references to the politicians of the State except those that are strictly matters of record, and the much-to-be-desired end would be accomplished. The so-called party organ, existing only because it is permitted to monopolize the county printing, would be deprived of its main resources for obtaining that control, the worthless political puffery cheaply obtained by means of a pair of scissors. Presently the politicians themselves, failing to obtain notoriety in legitimate newspapers, would lose caste even among the readers of the organs in spite of force of habit skillfully developed for generations. They would literally be left alone to bark to empty benches, and the State would save enough to warrant an enormous lowering of the rate of taxation. This presidential year is a splendid time to make the experiment. Nothing can be lost. Much may be gained.

### Southern Farm Magazine.

Two of the most valuable speeches made at the annual meeting of the East Tennessee Farmers' Association were by Secretary James Wilson of the United States Department of Agriculture. In one he discussed the opportunities for the Southern farmers in the development of the trade with the Orient, particularly the trade in cotton goods, and in the other he emphasized the necessity for greater attention in the South to raising horses, cattle and sheep and to the improvement of the soil by cultivation. The speeches contain so many practical suggestions that they are published in full in the July number of the *Southern Farm Magazine*. Of timely value, too, is a paper by James Allen Morris of Atlanta regarding the phenomenal progress made by Georgia in fruit-growing, and the opportunities for greater wealth in the canning industry. Another feature is a letter from Mr. Fred V. Coville, botanist of the United States Department of Agriculture, suggesting a comparatively new industry in the shape of perfumery gardens in the South. Other leading articles are by S. L. Cary of Jennings, La., on the conflict between machines and hand labor, in which he makes the point that machinery, instead of being a menace to society, is its greatest benefactor; by Col. J. B. Killebrew, on Johnson grass; by Edward Ingle, on a paradox of progress, in which are traced in novel manner the evil effects upon the negro race of false notions in education. Among the topics treated in the editorial and other departments are the relations of factories and farms, the development of diversified farming, the country boys' education, hints for the housekeeper, the contest for cotton-baling reform and a variety of other timely and interesting matter.

The *Southern Farm Magazine* is published monthly by the *Manufacturers' Record Publishing Co.*, Baltimore, Md. Price \$1 a year.

The Texas Hardware Jobbers' Association has elected F. A. Reitmann of Houston, president; J. C. Berney of Houston, Ed. Strauss of Waco, vice-presidents; James Moroney of Dallas, W. L. Sanford of Sherman, R. F. Bell of Weatherford and A. C. Goeth of Austin, executive committee.



# THE DOMINION OF IRON AND COAL.

## WHAT IT STANDS FOR.

By Edward Atkinson.\*

In dealing with the great commerce of the world certain facts should be noted:

1. The home market in every State or nation is by far the most important, even in respect to the great manufacturing and exporting countries. Domestic consumption and trade must always greatly exceed foreign traffic. But both domestic consumption and foreign trade rest upon coal and iron. Witness the relative unimportance of exports disclosed by the figures even of the principal manufacturing countries—Great Britain, France, Germany, the Netherlands and Belgium—which are the machine-using or manufacturing States of Europe. To them may be added the United States, and we have the great exporting nations listed.

From the latest report by Mr. Frederic Emory, chief of the bureau of foreign commerce, State Department, I have derived the figures from which the following computations are made. It is a case in which per capita estimates will not mislead:

Imports by the United Kingdom of Great Britain and Ireland—amount per head in 1898.....	\$57 00
Imports of France, Germany, Belgium and Netherlands, the latter being mainly ports of entry—imports per capita, 1898.....	35 00
United States.....	8 50

### EXPORTS PER CAPITA.

United Kingdom.....	\$29 00
France, Germany, Belgium and Netherlands.....	30 00
United States.....	17 00

The population of the five manufacturing States of Europe named numbers, in round figures, 147,000,000. They buy from us 87 per cent. of our total export at the rate of \$7.25 per head of their own population. They are dependent upon us in large measure for food, timber and fibers, and may become more or less dependent upon us for coal and iron.

The latest computation of the population of the globe given in the International Geography is 1,507,000,000. Deducting the numbers in the manufacturing States of Europe and the United States combined, 221,000,000, our possible customers in the rest of the world number 1,286,000,000. Their total purchases from us in 1898 were 13 per cent. of our total exports, or at the rate of a fraction over thirteen cents per head. But even this statement does not disclose all the facts.

Canada and Australasia, containing about 10,000,000 people, bought from us in 1898 a little over 8 per cent. of our total export at the rate of \$10 per head of their population. These figures being again deducted disclose that our total sales to Asia, Africa, Polynesia, Central and South America, Mexico and the West Indies were only 5 per cent. of our total export, varying but a fraction from \$60,000,000 for the supply of 1,260,000,000 people at less than five cents per head.

The forces of iron and steel are now penetrating these great areas, and are developing an increased power of purchase. When we cease to try to open the doors of commerce by force, and when we welcome their products in exchange for our own by peaceful methods, who can measure the increased benefit to these non-manufacturing States and to ourselves as well?

It will be observed that even in the United Kingdom, whose people depend more than any other upon foreign commerce, the total import and export can bear but a moderate ratio to what the home trade must of necessity be. We have no exact means of measuring it in figures. In Germany, France and the low countries the ratio of foreign trade to the home traffic is far less, while in this country the export traffic, although a sort of balance-wheel, relieving us from the surplus of our products, bears but a very small ratio to the great volume of the home trade.

We have not the exact data of the imports and exports of all other Continents and States, but the less advanced their inhabitants are in the application of iron and steel or of labor-saving mechanism to the useful arts, the more they depend on their domestic production, and the more is even their own consumption of the necessities and comforts of life limited. Low wages and high labor cost stand in the way of any general abundance.

The total exports from the manufacturing States of the world to the non-machine-using nations of Asia, Africa, South and Central America, Mexico and West Indies do not exceed \$1 per head of the population supplied, their imports from all countries not exceeding \$1.25 per head. It will be manifest that such a supply as can be measured by that sum (\$1.25 per head) would go but a very little way in sustaining even the poorest inhabitants of China, India or South America in their year's wants.

I shall not enter into a discussion of our present methods of attempting to increase our exports, but merely call your attention to the fact that we are now paying extra taxes at the rate of \$2 per head or more, a sum in excess of \$150,000,000 and probably \$200,000,000, for the privilege of killing "niggers" in the Philippine Islands under the pretext of extending our commerce in the East.

2. It will be observed that each of the five countries named as manufacturing States, on which, with the United States added, the rest of the world mainly depends for its supply of manufactured goods, is deficient in one or another of the necessities of life and of the materials for use in the manufacturing arts.

Great Britain is deficient in food, fibers and ores suitable for the manufacture of steel, and in many metals.

Germany is deficient in food, fibers and many metals.

France possesses an abundant supply of food, but is deficient in metals, coal, timber and fibers.

The United States only produce an excess of food, fuel, timber, of all the metals except tin, and of substantially all fibers except wool and silk; wool soon to be yielded in excess of our wants whenever the removal of duties on foreign wool enables our manufacturing industry to go on and prosper by working domestic and foreign wools together on even terms with England and Germany, or whenever the upland cotton States show sufficient vigor and intelligence to suppress the cur dog and to renovate the exhausted upland cotton fields by alternating sheep and cotton on the same field.

\*A paper read before Section I of the American Association for the Advancement of Science in New York June 26, 1900.

3. It follows from the conditions named that all the principal manufacturing States and countries except the United States are dependent countries, to whose people the export of manufactures is necessary to the supply of the means of living.

4. The foundation of all the manufacturing and mechanic arts rests upon coal and iron, because these are the elements of labor-saving machinery. Water has served a limited use, but cannot be compared with coal as a principal source of energy. Without the energy of coal in making the machinery which is worked by water, the latter would be of little use.

Under these conditions the relative position of the several countries named in respect to the labor cost and quantity of coal produced becomes an element of prime importance.

A recent return to the House of Commons made by the British Board of Trade with the customary thoroughness of that department gives the data for comparison in the subsequent computation.

I shall not confuse your minds with small fractions, but will submit all the data at the rate of two cents to the penny or \$4.80 to the pound sterling, and I shall make no distinction between long tons of 2240 pounds and metric tons of 2204 pounds.

The figures presented are those of 1898, which was a year of normal conditions before the "coal famine" of 1899 had developed in Europe:

### AVERAGE VALUE OF COAL PER TON AT THE PIT'S MOUTH IN 1898.

United Kingdom.....	6s. 4½d.	\$1 53
Germany.....	7s. 4½d.	1 77
France.....	9s.	2 16
Belgium.....	8s. 9½d.	2 11
United States.....	4s. 5d.	1 06

### CONSUMPTION OF COAL, 1898.

United States.....	Tons.	133,497,000
United Kingdom.....	Tons.	153,798,000
Germany.....	Tons.	88,141,000
France.....	Tons.	40,921,000
Belgium.....	Tons.	17,171,000

### PERSONS EMPLOYED AND COAL PRODUCT PER HAND IN THE YEAR 1898.

	Persons.	Tons.
United Kingdom.....	633,461	91
Germany.....	367,695	269
France.....	145,819	218
Belgium.....	122,846	189
United States.....	401,221	490

### POPULATION AND PROPORTION OCCUPIED IN THE PRODUCTION OF COAL.

United Kingdom.....	40,560,000	1.71 per 100
Germany.....	54,489,000	.66 per 100
France.....	40,000,000	.36 per 100
Belgium.....	6,669,000	1.84 per 100
United States.....	74,389,000	.54 per 100

The figures for 1899 cannot be exactly given. They were approximately as follows:

United States.....	Tons.	250,000,000
United Kingdom.....	Tons.	246,000,000
Germany.....	Tons.	100,000,000

It will be observed that the product per hand is lessening in Europe, while the labor cost measured by number of hands and wages is increasing. The product per hand in the United States is increasing, and the labor cost is diminishing with the rapid application of labor-saving machinery to mining.

In this connection the relative increase in our production of coal and iron becomes interesting.

The approximate figures have lately been computed:

Articles.	1880. Tons.	1899. Tons.
Coal.....	63,822,331	252,115,387
Iron.....	3,835,191	13,620,703

As yet no permanent substitute for coal and coke has been found for the smelting of iron and steel, the diminishing quantity of natural gas having served only as a small and temporary substitute.

We may now observe that progress in the application of iron and steel to the making of machinery for use in all other manufacturing arts (over 360 in number in this country by the census list) has immediately preceded the expansion of exports of all goods, first in Great Britain, next in Germany and last in the United States. Hence regard must be given to the connection of particular inventions in metallurgy with the several periods of the expansion in exports.

The application of steam-power, the use of coal and coke in iron works, the first invention of the blast furnace and other applications of science were all made in Great Britain between the year 1776 and the year 1825, the more important ones in the latter part of the last century. It will be observed that 1776 was the date of the first publication of Adam Smith's "Wealth of Nations," an event in economic history as important as the application of steam and coal to the art of making iron.

These inventions gave supremacy to Great Britain in all the manufacturing arts, enabling her to take the paramount control of commerce. Great Britain was thus enabled to resist the efforts of Napoleon to break her supremacy. She resisted him by granting subsidies of money to other continental States whose armies were sacrificed, while a relatively small number of British troops were put into the field. Her true power was in the industrial army, which enabled her to derive wealth from the applications of iron and steel and from her resulting manufactures and commerce, while French, Italians, Germans, Spaniards and Austrians who might have become rivals in the arts of peace, were engaged in mutual slaughter which led to a degeneration of which the effects are patent even at the present day.

Without her iron, steel and coal Great Britain could never have established her sea power, to which so much importance is given by the advocates of militarism. True, iron and steel naval machines, in which the admiral is powerless without the engineer, had not then displaced the wooden ships by which the sea power of Great Britain was established. But except for the application of iron, steel and coal, and except for the wealth attained by her commerce, these great fleets could not have existed. It may be a long time before commerce will suppress war, but as I have demonstrated in other papers submitted at this meeting, commerce is now the dominating power. War is becoming as absurd and out of date as it is brutal and demoralizing.

The era from 1800 to 1855 may be called the age of iron, during which term Great Britain held supremacy in all the manufacturing arts. In 1855 the inventions of Bessemer made the beginning of a revolution. These were followed by the inventions of Siemens, and in 1877 by the successful application of the Gil-



christ-Thomas or so-called "basic process" to iron ores high in phosphorus. This invention made the high phosphorus ores of Germany, which had been previously almost worthless, available for the manufacture of steel. The era from 1855 to 1900 may be named the age of steel.

I now call your attention to what may be only a coincidence in the increase in the relative exports of manufactures with the application of these different inventions in Great Britain, Germany and the United States, but which I deem a case of cause and effect. Steam, the blast furnace, the proximity of iron ores and coal gave Great Britain the control in the first half of the present century. With the invention of Bessemer the transfer to this country began, and with that transfer began our increase of exports, proceeding slowly until the tariff on iron and steel had become practically inoperative. The application of the basic process of making steel in Germany was immediately followed by an immense expansion of her exports of all manufactured goods. Do we not find cause and effect in these conditions?

So long as the puddling process was a necessary stage between the pig and the bar the making of iron was in large measure a handicraft, depending upon inherited aptitude, physical strength, and social conditions. These factors were held by Great Britain, whose commerce enabled her to procure food in ample abundance, rendering the competition of her well-fed navies and iron puddlers with the poorly-fed Germans and Belgians a very unequal contest. Until a very recent period women have been worked in iron and coal mines in Germany and Belgium, on the ground that woman power could be expended at less cost than coal. On the other hand, so long as iron was to a large extent a handicraft, the social conditions and better opportunities for more desirable work in the United States kept laborers away from the squalid and arduous conditions of the iron mine and furnace. As Daniel Webster said: "We could not afford to do such work ourselves when what was called foreign pauper labor could do it so well for us."

But we interposed high duties or legal obstructions to the import of the iron products of so-called foreign pauper labor, even after the Bessemer and other inventions had rendered our ultimate supremacy well assured. It therefore happened that between 1880 and 1890, the period of the most rapid application of the inventions of Bessemer, Siemens, Thomas and Gilchrist abroad, our use of the products of these inventions was very much retarded. One invention was taken and applied by what we now call a trust; the other invention was bought and for a time suppressed by the same parties. The duty on pig-iron and on the higher forms of iron and steel was so effective from 1880 to 1890 as to have compelled the consumers of iron and steel in this country to pay an excessive price as compared to their competitors in the manufacturing arts in Europe. This excess averaged not less than \$70,000,000 a year on the average of 10,000,000 tons of metal consumed in ten years, 1880 to 1889, inclusive. This tax yielded very little revenue to the government, but it increased the relative cost of all the tools and machinery used in all our factories and workshops, and of every railroad built in this country in ten years by at least \$700,000,000. It also kept down the natural demand of this country upon the iron mines and works of Europe, especially of Great Britain. We were the consumers of 30 per cent. of the iron product of the world, and our free demand would have advanced European prices and wages rapidly. But under the high tariff this tax was applied to building up iron and steel works in this country, the difference or tax for the benefit of our ironmasters paid by consumers in ten years amounting to not less than \$700,000,000, or more than the entire capital existing in all the iron mines, iron and steel works and furnaces in the United States in 1889. It was during that period that the manufacturers of Germany began to compete with Great Britain. It was not until 1890, when the duties on the imports of iron and steel had become practically inoperative, that we began in our great export of manufactures and in any true competition with the manufacturing States of Europe.

In 1890 it became plain that the tariff on iron and steel in the crude forms had become substantially inoperative. It was then apparent that by the year 1900 the iron and steel works of the world would become incapable of supplying the existing demand, and that the paramount control of those metals would have passed to this country. The scarcity of the ores of Europe from which steel is made by the Bessemer process was impending. The increasing cost of coke and coal in Europe had begun. These facts were so plain to one who could make any sort of forecast as to have led myself to try to fix the future center of the iron production of the world in an article which was printed in the *Baltimore Manufacturers' Record* of that year. In that article I used these words:

"I may not venture to say in this treatise that the supremacy in this branch of industry has passed away from Great Britain, but the increasing scarcity of her fine ores, the increasing depth of her coal mines, the great heat and difficulty in working them, the near exhaustion and consequent high price of coking coal and the change in the conditions of the workmen in Great Britain may sustain such a conclusion.

"The question is not, however, whether the United States will take away any part of the present iron production from Great Britain. The true question is: Can the iron-producing countries combined readily meet the prospective increase of demand.

"It may be that if the artificial obstructions or duties which are now placed in the way of the import of ores and pig-iron in this country were removed, then our complete supremacy in the production of pig-iron would be finally and permanently established, not by reduction in price in this country, but by bringing up prices and wages in Great Britain permanently to the standard of our own. If my forecast is well grounded, there can be no permanent reduction in price for many years, whatever the temporary fluctuations may be.

"When the disparity due to taxation is removed, and the price of iron is as high in Great Britain as in the United States, the supremacy in the consumption or conversion of iron into steamships, railway bars, heavy machinery, tools and the like may be finally established in the United States. When established within our limits, then the supremacy in the production of the iron itself must go to the point where the facilities for working the mines and the cost of assembling the materials at the furnace are least, because at that point the highest wages can be paid for skilled workmen, accompanied by the lowest cost of production, which will be due to such favorable conditions."

It is somewhat dangerous to indulge in prophecy, but one may sometimes venture on the basis of ascertained facts.

It happens to have fallen to myself to predict the era of cheap cotton by free labor in a pamphlet under that title of 1861, in which I laid down the whole future of the cottonseed-oil industry.

In a study of the railway service made in 1881, the mileage at the end of 1880 numbering 94,000, it became apparent from the logic of the case that our railway mileage in the year 1900 ought to reach 200,000. Had I fixed that mileage of 200,000 a year later, in 1901, it would have been very exact.

On this development of the railway I predicted an accelerating demand for iron. The figures which I gave in 1890 in connection with the previous quotation led to the following prediction. A summary of these conclusions will make the prospective demand of the world for iron in the year 1900 as follows:

Present production.....	Tons. 25,000,000
Increased consumption of the United States.....	7,000,000
In Great Britain, France, Germany and Belgium.....	2,000,000
In the rest of the world, of course subject to supply from the foregoing countries named.....	6,000,000
Total increase of demand.....	15,000,000
Total supply which will be required for the year 1900.....	40,000,000

I then assigned to the United States as their proportion of that prospective product 14,000,000 tons for the present year. It will probably be exceeded in some slight measure.

The domestic consumption of iron in the United States in 1890 was approximately 375 pounds per head. In 1900 it will probably exceed 400 pounds, subject to rapid increase year by year. The increasing demand will consist—

1. In the construction of about 100,000 miles of railway before the year 1915.
2. For building and construction.
3. For the electric railway system, of which no measure can yet be computed.
4. For the increased use of iron and steel in all arts which follows the extension of the railway.
5. In shipbuilding when the supremacy of this country is established and the obstruction of our present navigation laws is removed.

Doubtless the prices of iron and steel have lately been pushed higher than normal conditions will sustain, but at the lessened prices, which will still yield very large profits, we may soon witness an active demand resumed, while at the lessened prices the opportunity for export will be increased.

It may not be judicious to forecast this increasing demand. During the next ten years, however, the average increase in our population will exceed 2,000,000 a year. At 400 pounds per head, 400,000 net tons per year additional will be called for at the present rates of consumption. If the law of accelerating consumption continues in the future as it has in the past, coupled with heavy and increasing exports, it is doubtful if an average increase of 1,000,000 tons of iron per annum in this country for the next ten years will suffice to supply the demand.

In 1890 I attempted to fix the situs of the center of iron production, putting it at the Great Smoky mountain in Western North Carolina, a little too far south. At that date the imperial deposits of iron and coal in the South had become well known, but the vast deposits of Bessemer ores around Lake Superior had attracted but little attention. The development of these ores has established the center of the iron production a little further north—the Bessemer process at Pittsburg, the basic process in Alabama, but what the future development of the South may be time will tell.

It matters not whether the supremacy has come to us by means of protection or in spite of it. That would be a mere academic question. Suffice it that our vast superiority in the supply of coal and iron ore and our lead in the application of science and invention to labor-saving mechanism has developed the lowest cost of production that can be found, from which are derived the highest rates of wages and the best conditions of life that can be enjoyed in the conduct of these arts anywhere in the world. We have attained dominion over the imperial metals—iron, steel and copper.

I have placed these facts before you merely for the purpose of putting a few questions, in the hope that some of the economic students who have more time than I have for study, and who have not been subjected to seventy-three attacks of acetics, may take the matter up in response to the following queries:

1. Did the supremacy in commerce in the latter part of the eighteenth and the early part of the nineteenth century vest in Great Britain because of her paramount control of the supply of coal and iron?

2. Did the inventions of Bessemer, Siemens, Gilchrist, Thomas and others concentrate the forces which enabled France, Germany and Belgium to take over an increasing share or proportion in the increasing commerce of the world?

3. Does the paramount control of the production of iron, steel and copper at the highest rates of wages and lowest cost vest in the United States' supremacy in all the manufactures of useful articles in which those are the basic metals?

4. Does not the principal obstruction to the increase of our exports now consist in the duties upon imports, especially of the articles of foreign origin which are necessary in the processes of domestic industry, and which are and must continue to be the principal means of payment for our goods on the part of the non-manufacturing countries and continents in which we are hoping for a great increase of demand?

5. I will put a question which I have not developed in the previous treatise: Are there at the present time more than 4 or 5 per cent. of the persons occupied for gain in the United States who are engaged in any art or manufacture of which a product of like kind could be imported from any foreign country? This question covers both agriculture, manufactures and mining.

6. Are there not twice the number of persons who are occupied for gain, the demand for whose products depends upon exports, as compared to the number engaged in arts of which a foreign product of like kind could be imported?

7. Are not at least 85 per cent. of all who are occupied for gain without any direct interest in imports or exports being engaged in the arts of production and distribution, manufactures and agriculture, which exist of necessity within the limits of our own country, making our home market the most extensive?

8. In what way should our fiscal policy be changed and our revenue collected in order to promote domestic industry and foreign commerce alike?

Finally, the logic of the case in respect to iron and steel leads to such visionary



figures in respect to the future demand for iron that it is safer to put the case in the form of questions rather than to make predictions.

I have stated that the extension of the railway service of this country will probably carry the mileage from 200,000 to 300,000 in the next fifteen years. We have, it is true, a sufficient number of through lines from east to west, but the connecting lines and the necessary increase in the railway service of the South and Southwest, especially in Texas, cannot fail to carry construction nearly, if not quite, to an average of 10,000 miles a year from 1901 to 1910, inclusive. How much the development of electric tramways will be no man can tell. If we compute the lighter demands of tramways and add that to the extension of the regular railway service, can the two combined be less than equal to an average of 10,000 miles of regular railway a year? Every mile requires a hundred tons of iron and steel for its tracks and equipment, and that means a demand in addition to the present demand of 1,000,000 tons of iron a year for the extension of the railway service only.

Again, if the logic of events justified the prediction made in 1890 of an increase in the world's demand for iron from 25,000,000 tons to 40,000,000 tons in the year 1900, will not the demand in 1910 require a supply of at least 55,000,000 tons, probably 60,000,000?

If the consumption of iron per capita in this country increased as it has from 200 pounds per head in 1880 to 300 pounds per head in 1890 and to 400 pounds per head in 1900, will not the same logic of events require 500 pounds per head in 1910, when our population will exceed 90,000,000, domestic consumption calling for over 22,000,000 tons of iron? But the increased dependence upon other countries will make that supply insufficient. If the world's demand for iron in 1910 will surely require a supply of 55,000,000, and probably 60,000,000 tons, from what deposits of iron ores and coal will the increased supply be derived? In view of the present conditions of Europe, can any considerable proportion of the increase be derived from the mines and works of Great Britain, Spain, Sweden, Belgium and Germany? Can the ores and coal which are known to exist in China and in Africa begin to meet the increasing demands of China and Africa in the next ten years? Can Russia supply her own increasing demands? If not, who will make 60,000,000 tons of iron ten years hence, and in what proportions?

In 1878 the proportions of the total commercial product were:

	Per cent.
Great Britain.....	45.20
United States.....	16.30
Germany and Belgium.....	15.21
France.....	10.94

In 1889 the proportions were:

	Per cent.
Great Britain.....	33.16
United States.....	30.57
Germany and Belgium.....	17.64
France.....	06.53

Will it be possible for the world to get a supply of 55,000,000 tons ten years hence without at least 50 per cent. being derived from the mines and works of this country?

Then is not the problem now presented to the people of this country soon to become urgent, how to double the present product of iron and steel by carrying it from 14,000,000 tons in the present year to at least 28,000,000 tons in the year 1910, of which not less than 22,000,000 tons will be required for domestic consumption?

With these somewhat startling questions I leave the subject to the logic of events.

### The Iron and Metal Trades.

[Special to Manufacturers' Record.]

New York, N. Y., June 28.

In its review of the week the Iron Age says:

"It is useless to attempt to disguise the fact that the situation in the iron trade has been growing worse instead of better. The reductions in price which have thus far been made have not served their purpose in bringing the great body of consumers into the market. They continue to withhold their orders, and it will probably take some definite development of a favorable character to induce the placing of any considerable business. Instead of favorable developments, we have had for some time a succession of unfavorable influences. Among these the drought in the Northwest is just now exerting a particularly depressing effect. If conditions in that section were as they should be at this season the great implement manufacturers would undoubtedly have placed orders to cover the material they need in making up implements for next year, while other important consumers having considerable outlet in that direction would have undoubtedly been good buyers of iron and steel.

"A meeting of leading iron and steel-makers was held in this city on Tuesday, and while the nominal Pittsburgh prices of \$20 for Bessemer iron and \$28 for Bessemer billets were not changed, it is understood that the market is now an open one, and that pig-iron and steel are both being offered at much lower prices. The plan of having a fixed price on pig-iron and steel and then selling at lower prices is

not helping the market, but is hurting it. It is realized that prices on pig-iron, steel and finished products must get down to a solid basis before business will start up. There is plenty of tonnage in sight, and with prices down to where buyers think it safe to take hold, a great deal of business will undoubtedly be placed. But the reduction to a solid basis should be made quickly, so as to end the suspense.

"The fact must not be overlooked that a restriction of production is taking place, with the possibility that in a short time the supply of various kinds of material will be found sharply reduced. It is estimated that at least thirty blast furnaces making foundry iron have been blown out in the past two months. Southern blast furnaces are being banked because of labor troubles, and fear is expressed that a satisfactory arrangement cannot be made, but that quite a number of furnaces will be compelled to shut down to await a settlement. Ohio and Western Pennsylvania furnaces are also being blown out or banked, because of accumulations of stocks which cannot be moved. The failure to agree on the wages schedule for the coming year in Western rolling mills will certainly cause the closing of a considerable number of establishments of this kind after July 1. The effect of low prices in plates is seen in the stoppage of a large Western plate mill because of inability to meet present market prices without loss.

"Reductions in prices to a point that will induce buying, together with restrictions in production brought about by the causes enumerated, will put a totally different face on the situation.

"An important development in the metal

market has been the sharp advance in the price of pig lead. Two advances have been made during the week aggregating \$10 per ton, presenting a marked contrast to the recent course of prices in this commodity."

### Prospect of Coal-Miners' Strike in Alabama.

[Special to Manufacturers' Record.]  
Birmingham, Ala., June 27.

The coal miners' convention, now in session, has submitted a new scale of prices for mining coal, with fifty-five cents per ton as minimum and sixty-five as maximum, an increase of 20 per cent. Coal operators contend that they are now paying all they can afford. Both sides are in conference, with poor prospect of agreement. Miners also demand pay-day twice each month and eight hours as day's labor. Seven furnaces are banked, and it looks now as if we were on the eve of a great strike. The operators will not consent to miners' demands, and the dominant element among the miners will oppose any concession. The iron market is dull and lifeless, with nothing in it worth mentioning.

J. M. K.

### Machinery for the South.

[Special Cor. Manufacturers' Record.]  
Chicago, Ill., June 25.

The machinery which the Weller Manufacturing Co. has been furnishing its Southern patrons, briefly referred to in the Manufacturers' Record of June 7, consists of equipments for rice mills, including conveyors, elevator buckets, shafting and pulleys; also elevators for handling sacks and barrels. The company's principal trade, however, has been with the grain elevators through Texas, Oklahoma and other States. At present it has orders on its books or has filled within the past three weeks ten complete outfits, and a large number of other contracts are still pending. The Weller Company is equipping the Starkville (Miss.) Cotton Oil Mill Co. with elevating, conveying and power-transmitting machinery. It has also furnished several conveyor outfits for oil mills through various Southern contractors, and received some trade from the sugar plantations, as well as saw-mills, throughout Louisiana, all of which goes to show that the South is a profitable field for such manufactures, and further, that the above company is taking advantage of the business opportunities offered there.

The development in the South's industrial and business conditions, by municipal improvements and the establishment of new manufacturing enterprises, has brought with it a demand for filtering processes which is being felt in this market. Clarksville, Tenn., has recently adopted a 20,000-gallon filtering system made in Chicago by the O. H. Jewell Filter Co., closely allied with the New York Filter Manufacturing Co. in the production and sale of the celebrated Jewell water filter. Knoxville recently added a Jewell filtering plant with a daily capacity of 20,000 gallons to the water-works, making a capacity of 40,000 gallons per day for the entire Jewell system. The Jewell Company has equipped many of the largest factory plants of various kinds throughout the country with Jewell filters, which are celebrated for the excellent service they give. The company pays prompt attention to its Southern inquiries, which have recently shown a notable increase.

Southern users and handlers of laundry equipments are finding Chicago a profitable market for the purchase of laundry machinery, as this city is not only a heavy producer for home demand, but is an extensive exporter of the best laundry machinery made. The S. H. Sinclair Co.

has already completed a large volume of export business this year—more than doubling that of last season. It has fine facilities for supplying a very large trade, yet the demand this year has taxed the factory beyond its capacity, and much foreign business had to be refused. The company has placed its washers, driers and ironers in all parts of the South, and reports its entire trade very satisfactory.

The Weber Gas & Gasoline Engine Co. of Kansas City, Mo., has established a branch office in Chicago, 1531 Monadnock Block, under the management of W. B. Wood, an expert mechanical engineer, lately appointed sales agent for the territory east of the Mississippi river, the South not excepted. Mr. Wood was for four years with Fairbanks, Morse & Co., and for two years with the Cornell Machine Co. of Chicago. He will give close attention to the sale of the Weber engines and hoisting machinery for railroad pumping stations, mines, factory purposes, etc. The company has recently made additions to its works, greatly increasing its capacity for turning out all sizes of engines from 4 to 100 horsepower.

Ten out of the twenty-six Iowa and Dakota excursionists to Virginia, noted in my letter in the Manufacturers' Record of June 14, made investments and will locate in that State.

### RESOURCES OF ARKANSAS.

Ex-Governor Fishback's Comprehensive Summary of Conditions.

Editor Manufacturers' Record:

In your impression of the 7th inst. you invite discussion of "What Lines of Industry Offer Good Opportunities in the South?"

The Manufacturers' Record, or rather its editor, in a little pamphlet of a few years ago showed by statistics how rapidly the South was outstripping the New England and Middle States combined during the decade from 1850 to 1860. There was an inherent cause for this, and that cause was the immensely superior advantage in climate and natural resources of the South. Legislation and war have changed this during the decades since, but the same inherent advantages still exist.

Permit me to take Arkansas as an illustration, because of this State I can speak more advisedly.

It has been said by a Memphis newspaper which is thoroughly conversant with the State that "Arkansas is the richest State in natural resources on the continent; that you might wall it up and shut out all intercourse with the world, yet have all the resources for a great empire."

Yet these resources are scarcely touched. I cite a few:

1. This State produces every agricultural product raised in the North and many that cannot be successfully produced by our Northern States, such as cotton of a very superior staple, rice and sugar.

2. It has been estimated by competent judges that if the timbers—hardwoods and pine—of Arkansas were harvested and sold they would purchase every acre of land in Kansas and Nebraska at their present assessed values.

3. Her fruits, especially her apples, have carried off the premiums at all the world's expositions, and her premium apples are all seedlings, showing that it is the climate and soil which produce them.

4. Within a radius of 120 miles southwest, south and east of the city of Fort Smith are 20,000 square miles of coal. Of the coals of this county near Fort Smith the quartermaster-general of the United States army officially says they are from



25 per cent. to over 100 per cent. superior to any other in the world yet tested in heating capacity, while they are entirely smokeless. Coal for manufactures of this city before the strike in the mines near here last year, and which is not yet settled, sold for seventy-five cents per ton. It now is delivered at ninety cents per ton.

5. The death rate of Arkansas, even including our alluvial districts, where the negro population congregates and lives without any regard to hygiene, is nearly two per thousand less than that of our Northern States. In this city it is only 8.50 per thousand.

6. A railroad now building from Eureka Springs into our zinc field, 216 square miles in extent and superior in quality to the Missouri ores, according to Professor Branner, will put this zinc within 160 miles by rail of the coal field of this county, offering fine opportunity for the smelting industry.

7. We have 2199 square miles of marble, containing thirteen varieties, in our zinc field, besides onyx, lead, copper, phosphates, tripoli and manganese, and white sand for plate glass.

8. We have in Southwest Arkansas four kinds of marl in juxtaposition, a fact which Professor Branner, as also Professor Hall, in published reports say, "seldom occurs," and that "if properly utilized would be worth more to Arkansas than all the gold ever dug out of the earth has been worth to California."

9. We have aluminum clays, ochres, fuller's earth, granitic, turpentine, bauxite and all the clays used in the ceramic arts.

10. With such a climate and such resources, this State offers exceptional inducements to industries of various kinds under almost any circumstances. But when you consider the outside conditions the advantages are superior to almost any other part of the Union.

The vast domain of land to our west and northwest and southwest must necessarily remain an essentially agricultural region, which is filling up with a thrifty people more rapidly than any other portion of our Union, thus offering a splendid and rapidly-increasing market for all kinds of goods used by an agricultural community right at our door.

It is mainly due to this condition that every factory which has been started in this city has prospered phenomenally. Let me illustrate. A few years ago two mechanics started a small furniture factory here upon the co-operative plan. Now we have five large factories, whose goods are sold as far west as San Francisco and into the city of Mexico. The largest one says Texas alone demands more than it has capital to produce.

The last Republican National Convention advertised for 13,500 chairs to be delivered within sixty days. Every large factory of the kind in the United States bid on this contract. Fort Smith factory captured the award, and within thirty days had the chairs all loaded on a train for St. Louis.

A cotton factory here located alongside our two cotton-oil mills, handling the seed of 60,000 bales annually, and a thousand miles nearer the best market than those of the Eastern seaboard, could not but prove profitable. W. M. FISHBACK.

Fort Smith, Ark.

A dispatch from Corsicana, Texas, says that crude oil is being shipped regularly from there to Mexico, where it is refined.

George J. Ramsey, M.A., LL.D., of Louisiana has been given general advertising supervision of the educational department of the B. F. Johnson Publishing Co. of Richmond, Va.

### Opportunities at Tampa.

#### Editor Manufacturers' Record:

We notice in the Manufacturers' Record of June 7 your query, "What Lines of Industry Offer Good Opportunities in the South?"

It would not be wise to establish a cotton mill at Tampa. Iron and coal we have not, but this is the leading place for cigar manufacturers, as you well know, still we always would welcome as many more as would consider it to their advantage to come here. There is a good opportunity here for a fertilizer factory. The raw material is at hand, the market is next door. Florida gardeners pay enormous prices for freight on fertilizer shipped from the North.

There is also a splendid opportunity for a furniture factory at Tampa. We have valuable timber and cheap water transportation. Labor is comparatively cheap. The freight on some classes of furniture is over 25 per cent.

As chairman of the committee of manufacture of the Tampa Board of Trade I should be pleased to answer any inquiries in regard to these various manufacturing enterprises.

J. H. MILLS.

Tampa, Fla.

### Seeking Southern Location.

The South attracts many manufacturers from other sections who seek localities in which the raw material for their plants is available. The Hartwell Manufacturing Co. of Hartwell, Ind., is the latest corporation to state its intention to build branch factories in the South. This company manufactures hickory handles, wagon stock, carriage stock and similar goods, and desires to select a location near a plentiful supply of the timber required in its plant.

### Literary Notes.

James Sprunt Historical Monographs, No. 1. Personnel of the Convention of 1861. By John Gilchrist McCormick. A.B. Legislation of the Convention of 1861. By Kemp Plummer Battle. LL.D. Publisher, the University Press, Chapel Hill, N. C.

This publication is the first of a series of monographs to appear periodically, designed to throw light upon the history of North Carolina. It is made possible by the generosity of Mr. James Sprunt of Wilmington, which should meet a hearty response from the people of the State. The University of North Carolina and the Historical Society of the State have in their possession much documentary material of a private and public nature which has never been published. Efforts will be made to add to these resources other valuable material in the possession of individuals. This first number includes sketches of the North Carolina Convention of 1861, which, called to take vital action, contained a greater number of the leading men of the State than any other representative body ever gathered in its limits. These sketches, with historical introduction, is the work of Mr. John Gilchrist McCormick. In addition is a summary of the legislation of the convention, with interesting comments by Kemp P. Battle, who was a delegate to the convention, and who is now alumni professor of history in the University of North Carolina. The volume will be of great aid to the student of the history of the period covered by the convention. The idea of its publication is worthy of imitation in all Southern States. Many influences conspired to prevent in the past a proper cultivation of the historical spirit in the South, and there has been too much of a tendency to neglect even those sources of information which have escaped the rav-

ages of war. In recent years, however, there has been a decided change in this respect. Trained investigators and collectors have been gathering and preserving the material necessary to be read for a thorough comprehension of the South. There is still lacking the means for making such material accessible to a larger number of students and to the general reader. Mr. Sprunt's example points to the overcoming of this difficulty.

Wild Animals I Have Known. By Ernest Seton-Thompson. With 200 drawings by the author. Publishers, Chas. Scribner's Sons.

This fascinating volume contains the personal history of Lobo, the gray wolf; Silver Spot, the crow; Raggybug, the rabbit; Bingo, the dog; the Springfield fox, the pacing mustang; Wully, the yellow dog, and Redruff, the partridge. These stories are true. They are tragic in their conclusion. The author, in whom are combined the artist and naturalist, has spent nights and days with the subjects of his biographies; he has followed their careers through the seasons, and, full of poetic instinct, has produced some of the sweetest effects in American literature. Generations have been amused by the plantation stories of animals finally ennobled by that philanthropist for young folks, Joel Chandler Harris. Young and old readers of today have been delighted by the jungle tales of Rudyard Kipling. Patient investigators have studied the habits of birds and beasts from the scientific standpoint and have accumulated a mass of cold facts about them. Without yielding one iota of scientific accuracy, without indulging in fiction, without intruding upon the grotesque, Mr. Thompson has revealed most graphically the thoughts and feelings of a number of animals called wild. They are only relatively wild, however. Their pen pictures by Mr. Thompson do not show any attribute distinctly human, yet their lives are full of pathos and humor and their adventures thrilling. Their intelligence is shown to be marvelous, and as the book is laid aside with a sigh at the thought that it contains no more sketches, the reader, fascinated by the brilliancy of its conception and the art of its execution, is inclined to wonder which is more desirable, animal instinct or human reason, or whether reason is not a deeper form of instinct.

"Some Capitols and Some Renown for the Man Back of the Machinery" is the title of an attractive pamphlet issued by the Standard Oil Co. for the benefit of users of lubricating oil as calling their attention to Capitol cylinder and Renown engine oils. In rather unique manner are published endorsements of the oils by firms or individuals who have used them in thirty-seven States and two Territories in the United States and three provinces in the Dominion of Canada. The endorsements are accompanied by artistic half-tone engravings of the capitol buildings of the respective States, while at the bottom of the pages are portraits of the inventors and leaders of science during the last 150 years. The booklet also gives the chronology of the steam engine and of electricity, the epochs in marine engineering, facts about electrical units, the specific gravity, weight, melting point, etc., wire gauges in use in the United States and a variety of other practical points for men who use oil about machinery.

The general contents of the July number of Frank Leslie's Popular Monthly are as rich and varied as ever. In addition to its patriotic features, it has a nota-

ble leading article upon "Rapid Transit in Great Cities," by George H. Johnson, Sc. D., very profusely illustrated, presenting a comprehensive study of this important problem of modern civilization not only in Greater New York, but in Chicago, Boston, London, Paris and other centers of population. "Our Samoan Station," the tropical island of Tutuila, with its harbor of Pango-Pango, is described and beautifully pictured by Albert de Lautrepp. Lionel Strachey and Edmond Rostand collaborate in a fascinating sketch of "The Greatest Living Actress," who is none other than Sarah Bernhardt. Another personal paper is "Mary E. Wilkins at Home," by Katharine Hill; "Photography as a Sport," by W. Nutting, and "Women in Philanthropy," by May Wilkinson Mount, are interesting in their respective ways.

Publications of the Southern History Association are now issued bi-monthly, instead of quarterly. This is an improvement, in that the members of the association are kept in closer touch with developments in the historical field. The May number contains the report of the fourth annual meeting of the association by Dr. Coyer Meriwether, secretary; a paper on the purchase of Louisiana, by Daniel R. Goodloe; the journal of Thomas Nicholson, a traveling minister of the Society of Friends in North Carolina in the middle of the eighteenth century; anecdotes of General Winfield Scott; comment on the plan of Congressman J. William Stokes of South Carolina for a systematic investigation of public archives, and the usual well-stocked department of reviews and notices.

"Standard Steel Rails and Splice Bars Manufactured by the Carnegie Steel Co." is the title of a handsomely-bound volume just issued by the company illustrative of its far-reaching business. In attractive manner are presented standard specifications for steel rails, steel splice bars, steel bolts and nuts, steel railroad spikes, a table of rails and accessories, and a table showing what splice bars fit the rails, and thirty-five pages giving the drawings and metric dimensions of the standard rails and splice bars, together with the names of the railroads using the different styles. The volume is not only an attractive advertisement of the work of the Carnegie Steel Co., but will be found useful to men interested in railroad construction.

Among the leading articles in Cassier's Magazine for July are "Electric Power for Factories," by William S. Aldrich; "Invention as a Factor of the American National Wealth," by W. C. Dodge; "Machine Tools in the Mechanic Arts," by Dr. Coleman Sellers, and "Economies in Machine Shop Work," by Oberlin Smith.

The address of Mr. H. Dudley Coleman before the New Orleans Progressive Union on the development of manufacturing interests and commerce by cheap coal at New Orleans has been published in pamphlet form. The address is an argument as to the importance to New Orleans of the construction of the Birmingham and Warrior river canal, and of the Coosa river improvements by the general government.

Managers of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises and needing machinery or supplies of any kind will find it profitable to consult the advertising columns of the Manufacturers' Record. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.



## FOREIGN TRADE.

This department is designed to set forth opportunities for the extension of the trade abroad of American manufacturers, and to record facts about the rapidly-developing commerce of the South.

### Advantages of Southern Harbors.

A correspondent of Bennett's Weekly of New York, commenting upon the development of Southern commerce and its cause, says:

"If one will draw a radius of 1500 miles around either of the harbors of New Orleans or Galveston it will readily be seen that they command geographically the greater portion of the Eastern and Central United States, while the West, with its vast expanse, is their undisputed property for both imports and exports. This fact forces the bulk of imports and exports to gradually drift southward in spite of the endeavors of transcontinental lines and the efforts of commercial and financial power centers in New York, Boston and other Eastern cities. It is a fact that has been recognized by New York, and she tries and will eventually delay this Southern development by digging her harbor to a greater depth to hold the trade which will be carried in deep seagoing vessels, but at best it will only be a delay.

"There is one harbor which will eventually compel America's commerce to come to its shelter, as it will allow the largest vessels afloat and to be built for the next generation to come to its wharves, unload directly into cars and distribute the goods to the vast domain of North America, which is nearer by 1000 to 1200 miles than any Eastern harbor. I am speaking of the Willett outer harbor on Padre Island, near Corpus Christi, Texas, which, at the cost of about \$3,000,000, will secure a depth of from thirty-five to forty feet by building a steel trestle into the Gulf about 4200 feet in length to a sea wall that may be extended ad libitum, the depth of the harbor being maintained by the Gulf Stream doing the scouring (this is the only point where it comes so close to the coast). Furthermore, its nearness to the Isthmian canal is another important point in its favor, as this fact alone will divert most decidedly import traffic from New York and other places. Add to this the natural location as a natural distributing point and its great depth, it will force ocean rates below the level that Eastern harbors today count on."

### Need of American Merchant Ships.

The report of the British consul at Philadelphia for the calendar year of 1899 contains some significant statements. It shows that over \$65,000,000 in products were exported from Philadelphia, and that of this amount over \$30,000,000 worth went to the British empire. Less than \$500,000 worth were sent in American vessels, the balance being taken by foreign shippers, principally British. The Baldwin Locomotive Works exported 375 locomotives during the year out of a total of 948 built at the works. This indicates that over one-third of the product of this company during 1899 was for foreign customers. The principal countries to which the locomotives were exported were England, Siberia, Burmah, Finland, Brazil, Hawaii, Bavaria, Belgium, Russia, Africa, Canada, France, Japan, Cuba, Denmark, West Indies, Mexico, India, China, Algeria, Egypt, Norway, and Holland.

### For Business from Southern Ports.

According to advices from Liverpool, the steamship companies having service between Liverpool and the Southern ports

of the United States are preparing to secure an unusually heavy tonnage of grain from the Northwest during the present season. It is understood that the companies have offered special inducements in the way of service and rates to railroad companies terminating at the Gulf and South Atlantic seaports with the view of securing this business and of diverting more of the traffic from the North Atlantic ports. A calculation has been made that fully 100,000,000 bushels of wheat alone will be sent to Europe during the present year, and it is expected that much of it will go by the way of the Southern seaboard.

### American Engines in Egypt.

Today there are forty-six American locomotives either in use or ordered by the Egyptian railway administration; 371 cars are in use, and orders for 400 more cars have been placed. The superiority of American engines and cars, as well as of all other railway equipment and supplies, is conceded by railway officials and experts, and the demands upon our shops will continue to grow with increasing rapidity, in the judgment of United States Consul John G. Long at Cairo.

### An Addition to the Fleet.

The steamship Minnehaha, recently completed for the Atlantic Transport Line, will begin service between New York and London, leaving New York on July 28. This is one of four large vessels being built for the company for both freight and passenger traffic. She is 600 feet in length, 62 feet beam, and has accommodations for 250 passengers.

### Notes.

Rafael Bohorquez of Maracaibo, Venezuela, writes to the Manufacturers' Record inquiring about the best American makes of steamships, machinery for grinding corn and coffee, small steam engines, honing mills, mechanical wheels for forges and skiffs with oars.

John Bauman & Co. of Christiania, Norway, write to the Manufacturers' Record that they are anxious to get into correspondence with first-class American firms dealing in grain and provisions, leather, petroleum and cotton machinery, steel rails, locomotives and coal.

William M. James, Merida, Mexico, writes to the Manufacturers' Record that he desires the exclusive agency for a cash-registering machine. He says that all kinds of American goods are represented in a way in Mexico, but he thinks that novelties and foodstuffs are neglected.

In a letter to the Manufacturers' Record K. Ozawa, representing the Ozawa Shokwai, importing and commission merchants of Kobe, Japan, who is at present at 7 Rudall Crescent, Hampstead Heath, London, England, writes that he intends to visit the United States during August or September for the purpose of enlarging his business. He desires to obtain in advance the names of first-class manufacturers of cigarettes, rails, machines, wire nails, printing and cigarette paper, window glass, soap and lubricating oils, and also the names of importers of Japanese articles.

The Texas Implement and Vehicle Dealers at their annual meeting elected W. H. Richardson of Austin, president; J. D. Hefley of Cameron and C. Dickson of Cleburne, vice-presidents, and J. G. Belame of Taylor, secretary.

It is announced that the Hollander Steamship Line will operate a line of vessels between Pensacola and New York,

## RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

### Little Rock Street Railway.

The city authorities of Little Rock, Ark., have under consideration several applications for a franchise to operate street-railway lines in that city. A correspondent of the Manufacturers' Record writes that the company which at present controls the service has offered \$15,000 as a bonus, also 1½ per cent. on the net earnings for fifteen years and 2 per cent. for the next fifteen years. If the franchise is secured the company proposes improving the line at an expense of about \$80,000. Mrs. James R. Miller has also made a proposition to give \$10,000 bonus and 2 per cent. on net earnings for thirty years. If she secures the franchise she intends building a railroad.

### Air-Brake Equipment.

The law requiring all railroad companies to provide freight and passenger cars with air brakes by August 1 under penalty has required the various companies in the South to go to a large outlay to make the necessary improvements on account of the quantity of rolling stock in service. It is announced that the Southern Railway Co. has nearly completed the necessary changes to its cars, and that all of its rolling stock will be equipped with air brakes by the time indicated. When it is stated that the company has over 20,000 cars on its lines an idea of the character of the work required can be gained.

### Florida Pineapple Shipments.

The shipments of pineapples by rail from Florida will be very extensive this year. The shipments to Chicago alone, it is calculated, will aggregate fully 1000 cars, of which 200 cars will come from the vicinity of Palm Beach. One specimen of the fruit recently received at Chicago actually weighed nineteen pounds. A number of Western people have entered into the growing of the pineapples in Florida on a large scale. Hon. George B. Swift, ex-mayor of Chicago, having a patch of thirty-four acres alone.

### Important Alabama Line.

The Chattanooga & Gulf Railroad, now being completed from Columbia, Ala., to a point on the Pea river, will be of much importance in developing the section of the South through which it extends. The line is about seventy miles long, and is being built by a local company, but it is understood will be operated as a branch of the Central of Georgia system. Contracts have been let for the greater portion of the work, and a considerable mileage of the track has already been laid.

### Railroad Ties for Western Lines.

A large quantity of ties are being shipped from Mississippi for use on Western railroads. The Chicago & Alton has recently purchased 80,000 ties alone, which were shipped from the vicinity of Yazoo City to St. Louis. The ties secured in this section of the State are of a fine quality of oak, and the industry has given employment to a large force of men.

### Railroad Notes.

Mr. C. A. Benscoter has been elected president of the Southern Passenger Association. Mr. Benscoter is assistant passenger agent of the Southern Railway Co.

The auditing department of the Baltimore & Ohio Southwestern Railway is to be transferred from Cincinnati to Balti-

more, where it will be located in the Baltimore & Ohio Central Building.

The Richmond Locomotive Works of Richmond, Va., is now filling an order for twenty-seven locomotives for the Central Pacific Railway Co., which will be used on the mountain divisions of its system.

The land and immigration department of the Southern Railway is well represented at the Paris Exposition by an elaborate exhibit of minerals found in the territory adjacent to the Southern. Over 300 specimens are included in the display.

The Houston & Texas Central Railroad Co. has been compelled to purchase 250 freight cars to give it the necessary facilities for handling the grain crop in Texas. It is calculated that every car which the company can secure will be needed for the traffic.

According to a dispatch from Beaumont, Texas, the Gulf, Beaumont & Kansas City Railway Co. has made arrangements with the Southern Pacific to use the depot of the Southern Pacific at Beaumont, making this the terminus for its passenger trains.

The Atlantic Coast Line has recently given an order for twelve passenger coaches to be built by the Pullman Company. In addition the Coast Line is constructing twelve at its shops at Wilmington. It has also recently rebuilt a number of passenger cars.

The Wheeling Terminal Railway Co. has been incorporated in Ohio. It represents the new owners of the Wheeling Bridge & Terminal Railway, which was recently sold by order of the court. The new company will have offices at Wheeling, also Martin's Ferry, Ohio.

A dispatch from Shelbyville, Ky., is to the effect that in all probability the Shelbyville & Bloomfield Railroad will be placed in control of an independent company in the near future and again operated. The road was recently abandoned for traffic. It extends between the towns mentioned, a distance of twenty-six miles.

The annual excursion given by the Pennsylvania Railroad to newspaper men of Washington, Baltimore, Philadelphia and New York occurred on the 23d inst. A special fully equipped left Washington on the 23d for Cape May in charge of Colonel Studd. At Baltimore the guests from that city boarded the special, the party being in charge of Mr. Bernard Courlaender, district passenger agent, with headquarters at Baltimore. On arrival at Philadelphia Col. J. R. Wood, general passenger agent, and Mr. George W. Boyd, assistant passenger agent, with a number of distinguished guests from various sections of Pennsylvania and New York, joined the excursionists. The entire train, under the personal charge of Mr. George W. Boyd and Col. Frank N. Barksdale, chief of the advertising department of the Pennsylvania Railroad, arrived at Cape May on time, where they enjoyed, through the courtesy of that great corporation, a three days' outing. The attention to the most minute details by Colonel Barksdale in carrying out his assignment gave the trip an unusual tone of refinement. The Baltimore contingent, under Mr. Courlaender's charge, was loud in its expression of the fine executive ability displayed by that officer in the conduct of the trip.

Since 1895 the number of national banks in North Carolina has increased from twenty-six to twenty-nine, of State banks from thirty-nine to fifty-four, of private banks from twelve to twenty-five, and of savings banks from four to nine. The total resources of all the banks have increased from \$18,069,650.81 to \$29,332,257.44.



## TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

### New Methods of Cotton-Handling.

[Cotton Ginner's Journal.]

It must be understood that until a year ago virtually all the cotton baled at ginneries in this country had to undergo another process, known as compressing, before it became available (save where local spinners took it) for transportation by rail or ship. Ninety per cent. of American cotton was treated in that way last season. "Compressing," as it is popularly known, is a lucrative business. Annual dividends ranging from 15 to 30 per cent., and in some cases more than that, have accrued to compress investments in the cotton States. More than this, the American "square bale," the product of the compress system, is a package that offers opportunities to many handlers—buyers, samplers, classifiers, factors and others—ere it reaches the spinner.

Within the past few years a new method of baling cotton and preparing it for market has come to notice and claims attention. It is compressing at the gin, known at present as "the round-bale system," represented by a variety of patents and companies, some of the latter possessing large capital and wonderful energy and enterprise. The economies are truly potential, for at one operation, in one plant, the bale is turned out ready to put on car or ship, competent to take care of itself, minus the intervention or friendly offices of the compress above described, as well as many others of the group of handlers who are part and parcel of the old-bale system. The economies of the new bale appeal with force to everyone who helps produce it—from the grower who carries his cotton in the seed to the ginner to the spinner. It is claimed for the new system that it saves (and therefore makes) money for all who handle it, and it is admitted that it interferes with many who have made good money out of cotton. In round numbers, nearly a million round bales were turned out in America last season, and a beautiful package it is. It is gaining ground and favor steadily in this country, and the output of round bales next season will be double that of last.

For a decade the growers of cotton, the ginner, all who handle it, have understood full well that it was handled in a wasteful manner, entailing loss on the grower, as he pays all the expenses. It has been known that the spinners, the common carriers, the underwriters demanded a better package and meant to have it—if they could get it.

Compression at the gin, the round bale, is the first tangible, real response to those demands. It is a superior package; it gives the grower a better share in profits; it is ideal with the common carrier; it resists fire or any damage better, and we have the word of many spinners that it pleases them. It is better, and while it may be replaced by a still better, it will never be displaced by an inferior bale. Industrial or economic revolutions do not go backward any more than those of political, moral or ethical nature. The day will come when all cotton will be gin-compressed.

And the old bale? Thousands of gin-

ners must produce that or close down their plants. There is no alternative. The logic of the situation is to make that bale as near ideal as possible, so that it be taken readily by the world. There is the one resource left, and they can utilize it for several years yet, to the compress interest. Ere long they will see their interest and devote more time to making the most of what is open to them, and less to futile efforts to discredit and down systems and methods with advantages so patent that he who runs may read. *They will not build more compresses. New ones were wont to be constructed every year, but they do not build new ones now.* For many years, if the standard bale is bettered as it ought to be, there will be cotton for the compresses to handle, enough to save every investment now existing, and nobody wants to see them lose money. But eventually they will go, because they will not be needed. So with the ginneries now in operation. The number of gin plants will not increase, but the capacity of those that remain will be enlarged. But the ginner of the next decade will compress as well as gin cotton. With the changed system of ginning will surely come an equally radical change of methods of marketing the staple. It is inevitable and it will be logical, and the grower will suffer least of anybody.

We have presented this analysis of the situation in impartial spirit, minus fear, favor or prejudice, for it is a situation possessing interest for the cotton-using world. And looking to an era near at hand, when the Isthmian canal will be available and the attitude of the United States as a world-power, with great interests as well as responsibilities in the Far East; with the amicable relations it will maintain with great nations and people, the cotton of America will have even greater importance for the world, and all that pertains to handling and treating cotton, so that it may reach the users in the best shape possible, is worthy of consideration. From this time on the world may look with confidence for an improved and improving package of American cotton.

\*This statement is not entirely correct, as several square-bale compresses are now being built, some of them of large capacity.—Ed. M. R.

### Chattanooga's Fine Yarn Mill.

The production of fine hosiery yarns in the South is recalled by the announcement that the Richmond Spinning Co. of Chattanooga, Tenn., placed its final mule spindle last week. This company organized a year ago and expended about \$250,000 on the erection and equipment of its plant. The machinery includes 10,000 spindles and 16 mules, which were built in Manchester, England, as were also the universal winders used. The mill consumes sixty-five bales of American white cotton and Egyptian yellow cotton each week, and produces fine combed and carded hosiery yarns, Nos. 10 to 30, which are sold through the American Cotton Yarn Exchange of Boston.

### A \$10,000 Knitting Mill.

The Greenville (N. C.) Knitting Mills, reported last week as incorporated, effected organization during the week by electing L. I. Moore, president; D. E. House, vice-president, and W. S. Atkins, secretary-treasurer. The secretary states that the company will erect a brick building 40x65 feet, two stories high, and install sufficient machinery for a daily capacity of 100 dozen suits of men's underwear, and to employ thirty hands. Proposals on the machinery and building materials are invited.

### New Round-Bale Companies.

Under the heading "Roundlap Bales Have Captured Mississippi," the New York Commercial publishes a dispatch from Jackson, Miss., in which it is said:

"The charters of the roundlap cotton bale companies at Aberdeen, Holly Springs, Como, Batesville, Coldwater, Pontotoc, Senatobia and Sardis have been approved by Governor Longino. Such incorporations point to the passing of the old-style cotton gins and their square, unwieldy bales. Two years ago there was not one of these roundlap-bale presses in the State. Now there are scores of them in successful operation. It is claimed by the men who are putting their money in these roundlap bales that the cotton thus prepared for market sells for at least \$3 more per bale. The farmers of the South are gradually opening their eyes to the fact that it does not pay to stay in old ruts, and are hauling their seed-cotton to the gin that promises the most money. It will cost the South millions to give up the old square-bale outfit, but the handwriting on the wall is to the effect that they have seen their best days, and that the round bale has come to stay."

### Textile Notes.

The Rocky Mount (N. C.) Mills is adding new machinery; present equipment 27,000 spindles.

The Durham (N. C.) Hosiery Mills will increase capital stock from \$200,000 to \$500,000 and double its capacity.

The Thistle Mills Co. of Hechester, Md., will construct another dam, so that it may utilize its water-power flow twice.

The Suffolk (Va.) Knitting Co. has made a proposition to establish branch mill at Salisbury, Md., starting with fifty machines.

A. J. Henderson of Hampton, Ga., will establish a knitting factory. Two-story building 45x160 feet is now being erected to accommodate the machinery.

Messrs. W. H. Ragan, J. W. Harris, J. A. Lindsay and Charles Ragan of High Point, N. C., have incorporated the Carolina Manufacturing Co., with capital stock of \$100,000, to manufacture cotton goods, etc.

Messrs. S. M. Schindel and M. L. Main of Hagerstown, Md., have established a mercerizing plant of 1000 pounds capacity daily. They expect to organize a stock company and mercerize cotton on a large scale.

Messrs. John Pratt and J. H. Pratt of Anniston, Ala., have organized the Pratt Bag Co. and will establish factory. Machinery has been ordered and a building has been secured. Forty hands will be employed at the start.

Messrs. J. L. Coker of Hartsville, S. C.; T. E. Moore of Spartanburg, S. C.; C. C. Twitty of Spartanburg, and D. A. P. Jordan of Greenwood, S. C., have incorporated the Hartsville Cotton Mills, with capital stock of \$250,000. Their intention is to build, and details will soon be announced.

A movement for a \$200,000 cotton mill at Calhoun, Ga., is in progress and likely to be successfully carried out. W. P. Dodd states that \$50,000 of the capital is to be subscribed by local investors and \$150,000 by a company of the State. Further particulars may be expected in a few weeks.

W. I. Wellman, president of the Farmers and Merchants' National Bank of Huntsville, Ala., has received a proposition for the erection of a \$150,000 knitting factory in Huntsville. It is said that the company making the proposition operates eleven knitting mills in New York State. Mr. Wellman also has another

proposition for a smaller knitting mill than the one above mentioned.

The Cannon Manufacturing Co.'s No. 3 mill at Concord, N. C., is nearing readiness for the manufacture of cotton goods. The building is completed, a three-story 75x180-foot structure, and the 7000 spindles and other machinery is being installed. The steam-power plant is for 1000 horse-power, and transmits power by rope.

W. B. Smith Whaley of Columbia, S. C., who is one of the leading mill architects of this country and himself president of several large mills, among them the Richland, the Granby and the Olympia (the largest mill in the South), while here on a visit was arrested on Saturday at the instigation of the Buffalo Forge Co. of Buffalo, N. Y., who wanted him placed in the Ludlow street jail because, in his professional capacity as engineer of the Buffalo Mill in Union, S. C., he refused to allow the mill to ratify the contract made with the Buffalo Forge Co. Subsequent proceedings will be awaited with interest.—New York Journal of Commerce.

If New York laws permit arrest under such circumstances as stated by the Journal of Commerce, the sooner they are changed the better.

### Cottonseed-Oil Notes.

A cottonseed-oil mill and ginner is to be established at Wadesboro, N. C., by the Anson Oil & Ginning Co., the oil mill to have a capacity of twenty tons of seed daily.

The Euharlee Farmers' Club of Euharlee, Ga., is about to build a cotton-oil mill with a capacity of twenty tons daily. The company is capitalized at \$20,000, and wants prices on a complete equipment for its plant. H. H. Milam is secretary of the company.

The Darlington Oil Mill and Ice Factory at Darlington, S. C., has been chartered, with a capital stock of \$30,000. The incorporators are Charles E. Borden of Richmond, Va.; C. S. McCullough, L. S. Welling, John Siskron and C. H. Hewitt of Darlington.

The New Orleans market for cottonseed products has ruled steadily during the past week, with a light demand for spot lots of oil and some inquiry for future delivery. There is some export demand for cottonseed cake and meal. Receivers' prices are quoted as follows: Cottonseed, nominal per ton (2000 pounds) delivered here; cottonseed meal jobbing at depot, \$22 per short ton and \$23 to \$23.75 per long ton for export f. o. b.; cottonseed oil, 25 cents per gallon for crude loose f. o. b. in tanks here; in barrels, 28 cents, and 34½ to 35 cents for refined oil at wholesale and for shipment; oilcake, \$23 to \$23.75 per ton f. o. b.; linters—A, 4½ to 5 cents per pound; B, 4 to 4½ cents; C, nominal; hulls delivered at 20 cents per 100 pounds, according to the location of the mills.

The subscribers to the capital stock of the South Carolina Interstate and West India Exposition elected last week as directors F. W. Wagner, John A. Fickens, W. L. Welch, J. S. Hemphill, C. S. Gadsden, Samuel Lappam, J. L. Davis and W. Jones.

The Southern Cooperage Co., which commenced operations in Brownsville, Tenn., recently, will remove in a few days to Fayette county, the company having purchased the timber on an 11,000-acre tract near Somerville.

The South Texas Board of Trade has been organized at Victoria by delegates from six counties, with Thomas Buhler, president, and J. K. Hexter, treasurer.



**LUMBER.**

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

**LUMBER MARKET REVIEWS.****Baltimore.**

Office Manufacturers' Record,

Baltimore, Md., June 27.

While the volume of trade in the various lines of the local lumber market is by no means large, the movement, considering the period of the season, is more satisfactory than in the early days of June. There is every indication that business will again show up with a better demand, and as old orders are being cleared up and stocks ordered some time ago become absorbed, dealers are coming into the market again. Receipts of lumber during the past week have not been so liberal, and present stocks are ample for the demand. The demand from boxmakers is good, and some business reported among yardmen, while the building demand is still only moderate. Both air-dried and kiln-dried North Carolina pine are steadier as to values, and business in kiln-dried is reported fairly active. There is also a better movement in white pine, and values are firm, with a fair demand. A steady demand for cypress is the rule, and values are firm for all desirable stuff. In hardwoods there is no special feature, and a moderate trade demand is current, with values in some cases easy and in others steady to firm. The export trade to Europe shows considerable business, and exporters look forward to a good fall trade.

**Norfolk.**

[From our own Correspondent.]

Norfolk, Va., June 25.

The situation in North Carolina pine is now engaging the attention of manufacturers and dealers in all lines of the lumber industry, and considerable interest is felt in regard to its future. At the moment conditions are said to be of an encouraging nature, and while the volume of trade is, as usual at this period, rather moderate, there is a better undertone to the market generally. Curtailment in the output has so far had a good effect, and a number of small mills outside of the North Carolina Pine Association are running their mills on shorter time. The demand from Northern and Eastern centers is not so pronounced, owing partly to absence of speculation in buildings and the strikes among labor organizations. A fairly active demand from foreign sources is just now coming to the front, and some good orders have been received during the present month. The export business is improving considerably; berth room on steamers leaving this port is more plentiful and secured under more advantageous terms. It is expected that the lumber exhibit of North Carolina pine manufacturers and hardwood dealers at the Paris Exposition will have the effect of considerably increasing the sales of lumber from this and adjacent sections. There is a fair movement in box lumber, and in the better grades, while planing mills are generally busy, dressed lumber moving more freely. Prices for air-dried lumber are slightly easier, but for kiln-dried stock the list of values is steady, with a slight accumulation of stock at nearly all the mills. In a local way builders and dealers are buying freely to satisfy immediate wants, as building operations in the city and at suburban points are now showing considerable expansion. Shippers both by rail and water are getting fair rates, and vessels of desirable tonnage are more freely offered. Rates are easy at \$2.25 to

\$2.50 to New York and Sound ports, and \$3 to \$3.25 to Boston.

**Mobile.**

[From our own Correspondent.]

Mobile, Ala., June 25.

The lumber and timber market in this section continues to show a fairly active demand. In lumber, however, the demand shows a slight falling off, especially that from Cuba, South America and Northern ports. There is, however, a good business with European ports, and for the week about a million feet of lumber has been shipped to the United Kingdom and Continent. There is a fair movement in sawn timber, 174,363 cubic feet going abroad during the past week. Prices of sawn timber are steady at 15½ cents per cubic foot, 40-foot basis. In hewn timber shipments for the week were 27,275 cubic feet; quotations steady at 15 to 16 cents per cubic foot. Logs are in good demand; cypress 6 to 11 cents per cubic foot; cane ash, 20 inches and up, \$8 per 1000 feet; poplar, \$8 per 1000 feet, and oak, \$8 to \$12 per 1000 feet. Pine saw logs are in good demand at \$5 to \$10 per 1000 feet, according to average and quality.

**New Orleans.**

[From our own Correspondent.]

New Orleans, La., June 25.

The uncertainty which surrounded the lumber market in this section several weeks ago has been almost entirely dispelled, and business has settled down on a more favorable basis. Millmen everywhere are feeling much better in regard to the outlook for the lumber trade of this port, and throughout the State and country stocks of lumber as a rule are not excessive, while the output has been carefully looked after and gauged to the demand existing. Prices, too, have stiffened very perceptibly, and manufacturers now, instead of making concessions, are disposed to assume a firmer bearing in regard to values. Very favorable reports are coming in from sections beyond this State, and as a rule millmen are disposed to look for a busy season during the summer and autumn months. Yellow pine is now in very active demand, and a large trade is being done with Cuba, Central and South America and the United Kingdom and Continent. Orders are even coming from South Africa, and only last week a large shipment left Mobile for Port Natal, S. A., while lumbermen in this city expect in the near future to have considerable business with South African ports, as indications from correspondence on file point to millions of feet which are expected to go into consumption in that country. In the cypress trade there has been comparatively no falling off in orders, and business continues to come in from all the usual sources. It is stated that the output of the cypress mills of the State has been well sold up to the early fall months, and stocks continue to show no accumulation. Values for all grades of cypress continue very steady. The lumber industry in Louisiana is at the moment in a fairly satisfactory condition, and throughout the State all mills are generally well supplied with a good share of orders. This industry, it is said, has done more for the State than any other, over 1,000,000,000 feet of lumber being manufactured during the past year, giving a return of \$90,000,000 to \$100,000,000. The export trade of this port in lumber and timber is every year growing greater in volume, and the various companies located in this city, with their mills in this and other States, are now engaged in handling their output and shipping extensively to the United Kingdom and Continent, and, in fact, to all the prominent markets of the world. In order to

protect their interests this body of men, representing millions of capital, have adopted the plan of an organization composed of exporters of lumber and other commodities. This new company, called the New Orleans Exporters' Association, recently organized, will accomplish a vast amount of good. A charter will be secured, and it is said that in all probability an exporters' exchange will be established in the near future in connection with the association. The organization of this body will be of great value to the lumber interests of this port, and as there is now no friction existing between the exporters and steamship agents, everything is working harmoniously. The Exporters' Association will build up the rapidly-growing lumber trade here, making this one of the most desirable points of shipment for all products of the forest. Of great interest to the commerce of this port will be the opening of the Lake Borgne canal, which connects Lake Borgne with the Mississippi river. The company which proposes to operate this canal will have abundant capital, and the purpose is to establish an unbroken line of slack-water navigation between the Alabama coal and iron fields and New Orleans. The canal will also be invaluable for other purposes. Lake Maurepas, Lake Pontchartrain and Lake Borgne all contribute largely to the trade of New Orleans in shipments of lumber, naval stores and brick, but the cost of transfer across the city restricts this trade and makes the export of naval stores impracticable. With the Lake Borgne canal open products of these lakes can reach shipping in New Orleans without breaking bulk. Lumbermen at Gulfport, Miss., are looking forward anxiously for deep water, as on this rests the opening of the Gulf & Ship Island Railroad for through traffic to Chicago. The line will be completed to Jackson, Miss., in thirty days, and already large shipments of lumber are expected over the road. A great advantage to lumbermen will be the increased depth of the channels that are being dredged from Horn Island to and up the Pascagoula river to Moss Point. When these improvements are completed vessels of much larger size can enter and load, which will class Pascagoula as an important Mississippi port.

**Beaumont.**

[From our own Correspondent.]

Beaumont, Texas, June 25.

The outlook for a good fall trade in lumber is now considered as very promising, and manufacturers in this section consider all indications as quite flattering. The assurance of an abundant harvest in the northwestern section of the State was never more pronounced. Dealers have already commenced to buy for the autumn trade, and everything points to a firm market during the present year, with an increased demand as the season advances. There is an abundance of sawing orders, and a good inquiry for timber for building and railroad purposes. There is also an increased business through Sabine Pass, and the foreign demand is more decided in character. The various companies engaged in the foreign trade through Sabine Pass report business much improved, and the volume of trade for early July and August has shown considerable expansion. The Industrial Lumber Co. during the past week received an order for 1,200,000 feet of yard stock to be shipped to the northern coast of Cuba through Sabine Pass.

**Lumber Notes.**

Over 20,000 acres of land, the property of the Georgia & Florida Round Timber Co., were sold this month at Lake City, Fla. Camp Bros. of White Springs were the purchasers.

The Consumers' Lumber Co. of Meridian, Miss., has been organized for the purpose of conducting a general lumber business.

The Southampton Lumber Co. was chartered last week at Norfolk, Va., with a capital stock of \$25,000. The incorporators are H. L. Smith, J. E. Duke, R. W. Shultice and others.

The Scroggin Lumber Co. of Glover, Mo., has been chartered, with a capital stock of \$10,000. The incorporators are G. W. Scroggin, Allison Tims, W. L. Scroggin and others.

One of June Bros.' dry-kilns at Hammond, La., was entirely destroyed by fire on the 18th inst. Their saw-mill and other kilns were saved by the fire department after great exertion.

J. D. Hollingshead of Chicago will erect a cooperage plant at Paducah, Ky., with a daily capacity of 2000 packages, and will manufacture tight barrels. He will invest in the plant \$75,000.

Gillett Bros., who have been operating saw-mills in the Big Hatchie district, near Brownsville, Tenn., will remove their plant to Prescott, Ark. At that point they will erect two mills with a cut of 30,000 feet a day.

At Marlinton, W. Va., the Greenbrier Lumber Co. is putting in the largest saw-mill plant in the State. It is estimated that mill ready to run will cost \$90,000 and have a capacity of over 100,000 feet of lumber per day.

The boilers and other machinery for the extensive saw-mill plant of the Empire Lumber & Mining Co., now being erected at Shady Valley, Tenn., arrived last week at their destination. The company's plant is expected to be in operation by early fall.

E. H. Warner, a hardwood lumberman from St. Louis, closed a deal last week with Bonner Bros. of Brownsville, Tenn., for a barge and several carloads of poplar to be shipped from their Mississippi mills. The amount of the shipment aggregates 400,000 feet.

The shipments of lumber from the port of Mobile from September 1, 1899, to June 22, inclusive, aggregated 125,839,406 feet, against 60,857,942 feet last season. Shipments of sawn timber for the same period amounted to 4,484,674 cubic feet, and of hewn timber 617,756 feet.

A heavy logging tide was reported last week to have risen on the Emory, Clinch, Powells, Holston, French Broad, Tennessee and Little Tennessee rivers, and that logs were being floated out on every hand. It is stated that over 4,000,000 feet of good oak, poplar, walnut, gum and beech logs are expected to arrive at Chattanooga.

Indications are that all the saw-mills at Moss Point, Miss., will resume operations this week. The Dantzier Lumber Co. announces that it is running with full crews. The Moss Point Lumber Co., Dewey & Co., the Lake Mills and the Robinson Land & Lumber Co. will resume in a day or two. The Cowan & Patterson Mills and those of R. C. Avert are running on full time.

A St. Louis lumber firm has had an agent for some time past getting out crossties from the swamps near Yazoo City, Miss. Several weeks ago the firm, through their agent, shipped 80,000 oak ties of the finest quality. These ties were shipped to St. Louis by river, never touching a railroad track until they were unloaded from the barges in East St. Louis. The through shipment was engineered entirely by the Mississippi Valley Transit Co., and the 80,000 ties were towed to St. Louis in eight barges, each carrying 10,000 ties.



## MECHANICAL.

### Niagara Shaking Grate Bar.

The Dobbie Foundry & Machine Co. of Niagara Falls, N. Y., with office and supply department at 38 Dey street, New York city, ever on the alert to extend an already voluminous business in contractors' supplies and general machinery by the adoption of new and useful devices, has recently acquired two very valuable patents for boiler furnaces. These patents are in the shape of an entirely new

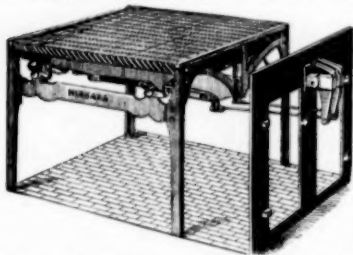


FIG. 1—SHOWING COMPLETE GRATE WITH BARS LOCKED IN POSITION.

shaking grate and an automatic smoke-consuming device, which the company is now manufacturing and placing on the market.

So great a boon to all users of steam plants must their adoption prove that these devices are worthy of a special description.

The "Niagara Shaking Grate" is entirely unique in construction, possessing all the advantages of the present shaking grates, but combining entirely new and essentially beneficial features, viz., a very much increased air surface, with but a three-eighths-inch opening.

This grate has been specially designed for slack or soft coal screenings, which, owing to the increased air surface, burns to perfection; at the same time, on account of the peculiar construction of the grate, loss of fuel is prevented. It equally gives perfect results with all other grades of both anthracite and bituminous coal, and is guaranteed by producing superior combustion to not only increase the steaming capacity of the boiler, but likewise to effect a saving of from 10 to 20 per cent. in coal bills.

As to the construction of the "Niagara" shaking grate, the accompanying illustrations will reveal it. Built in a frame independent entirely of its surroundings, with all its working parts far removed from the fire, so as in no way to be affected, it is

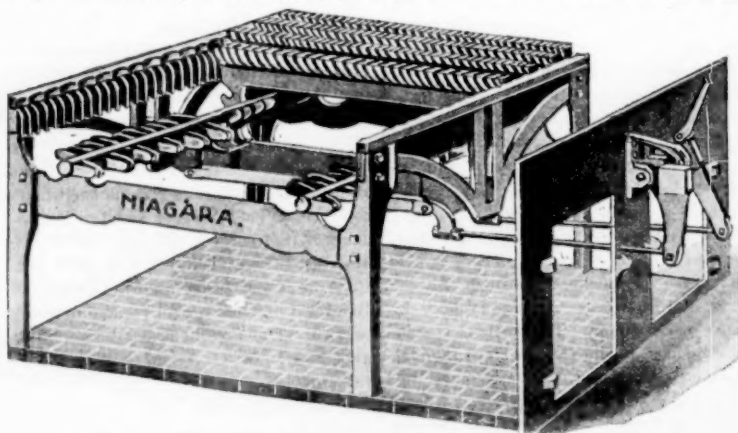


FIG. 2—SHOWING FRAME WITH SOME OF BARS REMOVED.

claimed to be the only bar the body of which does not in itself present a fire surface, a comb raising at a forward angle from the bar and presenting a perfectly level surface when at rest, accommodating the fuel at least one and one-quarter inches above. (Fig. 3.) The bar, heavy in the center, tapers to both top and bottom, presenting a knife-blade edge which forms no resistance whatever

to the escaping ash (Fig. 4), and as by this means a free circulation of air is allowed, both through and over the surface, no trouble is ever experienced with warped bars. The forward angle of the comb gives a natural flow of air towards the rear of the boiler, assisting materially in improving a sluggish draft.

As a shaking bar with vertical motion it is claimed to have points superior to other shaking bars, its action cutting the crust, allowing free escape of ash, and forcing any clinkers to surface, but possessing, as it does, that essential feature of a perfect bar, viz., a proper air surface, its maker defies comparison with any shaking grate on the market. With a three-eighths-inch opening an air surface of 57 per cent. is obtained, about 25 or 30 per cent. more than in the ordinary bar.

A perfect combustion requiring that there be twenty-four pounds of air to one of coal, it can readily be seen that the grate with the most air surface and one that will at the same time accommodate the coal, is the most desirable grate.

One of the special features of the "Niagara" shaking grate is that it can be

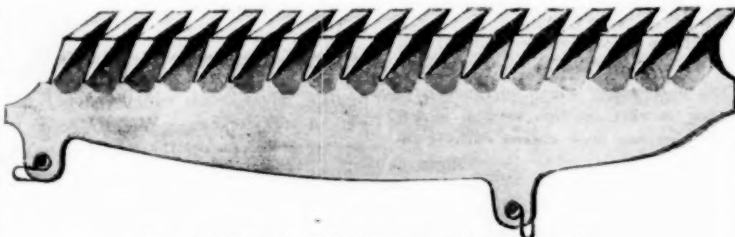


FIG. 3—VIEW OF SINGLE BAR SHOWING COMB.

placed in the furnace or removed therefrom without interfering in any way with the brick walls or boiler front. It is entirely independent of its surroundings.

The manufacturer will equip furnaces with the "Niagara" shaking grates free of charge to test their fuel-saving qualities, and if after thirty days' trial the guaranteed saving is not effected, will remove grates and leave the furnace as found, without expense or inconvenience to the owner.

The "Niagara" bar, while being introduced here for the first time, is by no means an experiment, but comes highly recommended from the very best manufacturers of Canada, where it has been an unqualified success for several years past, and where all users attest to its supe-

riority over other bars. The figures of many valuable guaranteed tests are in possession of the manufacturer, and will appear in its new catalogue. All manufacturers are anxious to reduce their coal bills, and a firm which will do business on a substantial guaranteed saving must have a good article to do business with.

### Something Cooling for a Hot Day.

In the hot days of summer we realize most vividly how much we are dependent on the movement of the air to secure comfort. It is not enough, however, to merely agitate the air with a fan, but in most cases we are distinctly dependent upon a



FIG. 4—TOP VIEW OF COMB SHOWING KNIFE-BLADE EDGE.

change in the atmosphere within the room, which can only be secured by forcing in the air or by withdrawing it by positive means and permitting a fresh supply to enter to make good the loss. For the purpose of securing such results an electric ventilating fan like that shown in the accompanying illustration is almost invaluable. It may be attached to an opening in the wall and arranged to force into or draw directly from the room, or it

may be connected to a system of air ducts through which movement is maintained.

The illustration serves to show a special type of fan built by the R. F. Sturtevant Co. of Boston, Mass., which is especially designed to meet the above conditions.

This fan is driven by an electric motor of the bipolar type, entirely enclosed, so as to protect it from dust. The end plates, with removable centers, as shown in the illustration, serve to enclose the motor and still leave its parts readily accessible. One of the difficulties in designing an enclosed motor is to provide for the ready distribution of the heat generated by its

operation. This end is secured in this type of motor, first, by careful designs, so that a temperature rise of only 60 degrees F. marks the limit at a run of ten hours, and second, by the cooling effect of the large volumes of air continually drawn across the surface of the motor casings by the action of the fan. The motor is rigidly held and accurately centered within a tripod support which is attached to a cast-

iron ring. This ring contains the fan-wheel, which is designed to deflect the air into line parallel with the shaft. The entire apparatus is shipped complete, and can be readily attached where desired and electric connection made. These fans are built in sizes ranging from 18 inches to 120 inches in diameter, driven by motors ranging from one-sixth horse-power to fourteen horse-power, according to size, and handling from 2000 cubic feet per minute in the smallest plant up to 175,000 in the largest.

Land Commissioner Charles Rogan sold last week at Austin, Texas, the timber on one section of land in Jasper county to the Beaumont Lumber Co. for \$4032. He also sold sixteen other sections and fractional parts of sections in Newton and Sabine counties to George B. Moore for \$32,368. His total sales during the month of May aggregated 432,000 acres of timber land.

A corporation known as the McNair & Wade Land Co. was organized at Montbrook, Fla., last week, with a capital stock of \$200,000. The concern expects to buy and sell timber lands, build and operate railroads and manufacture lumber and naval stores. The officers of the company are N. G. Wade, president; D. M. Flynn, vice-president, and P. M. Coulson, secretary and treasurer.

The annual meeting of the South Carolina Lumber Association met on the 20th inst. in Charleston, S. C. Mayor Smyth made a brief address welcoming the visitors to the city. The association disposed of a number of matters relating to the trade, and the industry generally was thoroughly discussed. The deliberations of the association were behind closed doors, and proceedings are not made public.

The Andalusia Lumber Co. of Andalusia, Ala., has been organized, with a capital of \$100,000. The stockholders are



ELECTRIC VENTILATING FAN.

Tillis & O'Neal of Montgomery; J. R. McLane of Geneva, Ala., and R. T. McDavid of Unola, Ala. The company has just closed a deal with the J. P. Williams Co. for 17,000 acres of fine timber land near Andalusia, and has a deal on for 6000 acres more. A fine saw-mill will be erected near Andalusia, and the company will do a general timber and lumber business.

Manufacturers in need of grate bars are



# CONSTRUCTION DEPARTMENT.

**THE MANUFACTURERS' RECORD** seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

\*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted." In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in a town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and it is often advisable to add the names of one or more incorporators as an aid to the postmaster in delivering mail.

The Hartwell Manufacturing Co. of Huntington, W. Va., is looking for a good location in the South for the establishment of branch factory for production of handles, wagon stock, etc.

## ALABAMA.

Andalusia—Lumber Mill.—The Andalusia Lumber Co. has been organized, with capital stock of \$100,000, and has purchased 17,000 acres of timber lands and is negotiating for 6000 more; company will build mills and conduct a large lumber and timber business. Tillis & O'Neal of Montgomery, J. R. McLane of Geneva and R. T. McDavid of Unola are the incorporators.

Anniston—Bag Factory.—The Pratt Bag Co. has been organized for the establishment of a bag factory by John and J. H. Pratt; machinery has been ordered.

Anniston—Mercantile.—The Anniston Grocery Co. has been organized, with capital stock of \$30,000. O. H. Parker is president.

Clayton—Electric-light Plant and Water-works.—Hall & George of Starkville, Miss., have contract for engineering work in designing and supervision of the erection of the electric-light and water-works plant at Clayton, to cost about \$35,000. The date for contract letting has not been set.

Courtland—Cotton Compress.—R. H. Tweedy and H. D. Bynum will erect a square-bale cotton compress and ginney.

Eples—Cottonseed-oil Mill.—Cottonseed-oil mill is being erected; capital stock \$50,000. Names of interested parties later.

Florence—Sewerage System.—The city will construct a \$10,000 sewerage system. Address Mayor Weakley.

Ironton—Electric-light Plant, Water-works, etc.—Mr. Turpin and associates have been granted franchises and will establish an electric street-car line, electric-light plant, gas plant, water-works, etc.

Ozark—Cotton-oil Mill and Fertilizer Factory.—The Ozark Cottonseed Oil Mill & Fertilizer Co., reported recently as incorporated, will establish a cottonseed-oil mill and fertilizer factory; L. W. Kolb, secretary.\*

Silgo—Coal Mines, etc.—The Coosa Valley Coal, Iron & Mining Co., reported recently under Gadsden, Ala., as incorporated, is a reorganization of the Silgo Coal Co., which

has been in operation for a number of years; company has 1040 acres of coal, 200 acres red ore, 224 acres brown ore and 160 acres of iron pyrites, and will begin operations on recently-acquired property about July 1 and enlarge as demand increases; will also open up its red ore in Etowah county about September 1. Address W. E. Knox, Anniston, Alabama.

## ARKANSAS.

Dodd City—Mining.—The Governor Eagle Mining Co. has been incorporated, with capital stock of \$100,000, by William G. Dollis, president; George R. Denny, vice-president, and John J. Eastin, secretary and treasurer, to prospect for lead, zinc and copper.

Lester—Coal Mines.—The Arkansas Coal, Gas, Fire-Clay & Manufacturing Co. will largely improve its coal and other properties.

Little Rock—Transportation, etc.—The Red River Land, Timber & Transportation Co. has been chartered, with capital stock of \$10,000, by George Goodrich, president; W. T. Bruen, vice-president; George B. Irby, secretary and treasurer.

Mena—Printing.—The Lindsay Printing Co. has been incorporated, with capital stock of \$1500, to conduct general printing and paper business. S. L. Lindsay is president; Geo. W. Knowlton, vice-president; H. J. Radcliffe, secretary.

Prescott—Lumber Mills.—Gillett Bros. of Brownsville, Tenn., will remove their lumber mills to Prescott, Ark., and establish two mills with daily capacity of 30,000 feet.

## FLORIDA.

Apalachicola—Ice Plant.—Rice & Henry will erect an ice plant of ten tons capacity; contract awarded.

Early Bird—Saw-mill.—Howell & Martin will build saw-mill of 25,000 feet per day capacity, as reported recently under Standard, Fla.

Live Oak—Cotton Ginnery.—A company has been organized for the establishment of a ginnery and mill. T. J. Carroll, from whom site was purchased for the building, can probably give names of those interested.

Montbrook—Naval Stores, etc., Company.—The McNair & Wade Land Co. has been organized to manufacture naval stores, lumber, etc., with N. G. Wade of Montbrook, president; D. M. Flynn of Montbrook, vice-president, and P. B. Colson of Bronson, Fla., secretary and treasurer; capital stock \$200,000.

St. Cloud—Sugar Mill.—Sabel Bros. of Jacksonville, Fla., have purchased the sugar mill at St. Cloud of the Disston Land Co.

Tampa—Cooperage.—The Tampa Cooperage Co. will establish a plant for the manufacture of barrels for naval stores, etc.; T. E. Nelson, manager.

Tampa—Docks, etc.—The Florida Fish & Ice Co., John Savarese, president, is having plans made by Miller & Kennard for the construction of a dock 170 feet long and 50 feet wide, and two slips each 75 feet long by 15 feet wide.

## GEORGIA.

Atlanta—Light, Heat and Power Plant.—An ordinance has been introduced in the city council granting franchise to the Atlanta Railway Co. to establish and conduct a plant for the purpose of supplying electricity for heat, light and power; Joseph Hirsch, vice-president.

Atlanta—Cannery.—The Orchard Canning Co., reported recently under Dublin, Ga., as incorporated, will build a cannery at Shewmake with capacity of 50,000 cases. Address Claude Shewmake, Atlanta.

Dublin—Plow Works.—The Dublin Plow Works has been incorporated, with capital stock of \$10,000, by J. A. Spain, J. L. Mannis, Walter B. Jones and others.

Dublin—Woodworking Factory.—The company reported recently to be formed for manufacture of baseball bats, axe handles, hoe handles, etc., has been incorporated as the Oconee Manufacturing Co., with capital stock of \$5000, by J. A. Spain, J. A. Jackson and B. H. Rawls.

Euharlee—Cotton-oil Mill.—The Euharlee Farmers' Club and others are endeavoring to organize a \$20,000 company to establish a 20-ton cottonseed-oil mill, as lately reported; building will be 40x80 feet. Address H. H. Millam, secretary.\*

Gainesville—Smelter.—The Colorado-Georgia Smelting & Gold Mining Co., James M. Smith of Atlanta, Ga., president, previously reported, has commenced work on its \$30,000 smelter.

Hampton—Knitting Mill.—A. J. Henderson is erecting a knitting mill, two stories, 45x160 feet.

Macon—Brewery.—The Acme Brewing Co. will enlarge its brewery; present capacity 600 barrels every twenty-four hours.

Milledgeville—Flour Mill.—John A. Brooks has installed a new wheat mill.

Rome—Extract Factory.—R. W. Weatherly, John R. Jones and O. E. Marshall have incorporated the Celero-Pepsin Company for the manufacturing of flavoring extracts of all kinds; capital stock is \$5000, with privilege of increasing to \$20,000.

Savannah—Broom Factory.—The Antiseptic Broom Co., reported recently as incorporated, will absorb the business of the Savannah Broom Factory, and will operate the patents granted to O. S. Kulman for antiseptic brooms. Address O. S. Kulman, manager.

Waycross—Cannery.—A stock company with capital of \$5000 will be organized for the establishment of a cannery. Names of interested parties will be announced later.

## KENTUCKY.

Elizabethtown.—Chartered: Mantel & Mantel Co., stone contractors; capital stock \$200,000.

Hayesville—Milling.—Chartered: The Ohio Valley Milling Co., with capital stock of \$7500.

Lexington—Gas Plant.—The Newark (N. J.) Gas Co. will lease the Lexington Gas Co.'s plant, improve and operate it.

Louisville—Saddlery.—Harbison & Gatt-right, reported recently as incorporated, has a capital stock of \$250,000, not \$25,000, as reported by mistake.

Louisville—Ice and Cold-storage Plant.—The Citizens' Ice & Cold Storage Co. has been chartered, with capital stock of \$25,000, by W. E. Chess and L. H. Wymond.

Louisville—Lead Mines.—It is stated that the Gratz Lead Mining Co. has been organized, with capital stock of \$1,000,000, and purchased 500 acres of lands in Henry and Owen counties and started two tunnels; mills also to be erected and a shaft sunk to the tunnels; M. H. Miller, general manager; D. J. Miller, engineer.

Paducah—Paving.—Complete bids have been received from Halloran & Stickney and Patterson & Porteous for paving five city blocks with brick at a cost of about \$16,800. Address "The Mayor."

Vanceburg—Electric-light and Power Company.—The Vanceburg Electric Light & Power Co. has been incorporated, with capital stock of \$5500, by J. W. Mathewson and E. A. Hodge.

## LOUISIANA.

Abbeville—Water-works.—The city will construct a system of water-works. Address J. R. Leguenec, mayor.\*

Hammond—Shoe Factory.—F. R. Saunders, T. M. Campbell and A. J. Porter will establish a shoe factory.

New Orleans—Paint Factory.—R. B. Parker has purchased the American White Lead and Color Works for \$44,000, and will, with John McCloskey, Francis Martin and J. T. Witherspoon, organize a \$50,000 company for overhauling and operating the works; a corrodng plant to prepare common lead for marketing may be constructed later on; the cost of such a plant is estimated at \$100,000.

New Orleans—Plaiting Works.—The Royal Plaiting Co., Limited, has been incorporated to manufacture and sell plaiters and plaiting machines, plaited cloth and material, etc.; Thomas W. Castleman, president; Samuel Georgehegan, vice-president; H. D. Hart, treasurer; capital stock is \$100,000.

New Orleans—Automobile Factory.—The mayor is in correspondence with W. K. Freeman, who is investigating with a view to establishing an automobile factory.

New Orleans—Timber Lands.—Ira E. Wright, Chas. J. Herr, George Hoffman and others have incorporated the Kissatchie Land Co., Limited, for the purpose of dealing in timbered and other lands; capital stock is \$40,000.

## MARYLAND.

Baltimore—Hardware Supply Company.—The Hardware Supply Co. has been incorporated, with capital stock of \$15,000, by William H. Whiting, J. Walter Abbott, Andrew V. Cutino, James Walker and others.

Baltimore—Button Factory.—The Raymond Button Co. has had plans and specifications

prepared by Thomas C. Kennedy for the erection of a brick factory 50x100 feet.

Baltimore—Ice Plant.—G. W. Gengnagel has awarded contract for a 10-ton refrigerating plant.

Baltimore—Land Company.—Chartered: The Multivideo Land Co., with capital stock of \$12,500, by Thomas Deford, Richard D. Maynard, Richard J. White and others.

Baltimore—Electric Plant.—Isidor Tewelles, 227 North Eutaw street, is investigating the advisability of establishing a co-operative electric-light plant.

Baltimore—Bottling Plant.—The J. F. Wiessner Brewing Co. has purchased site for \$3000 and will build a two-story brick and stone structure to cost \$50,000 for the enlargement of its bottling establishment. Plans have not been prepared.

Baltimore—Showcase Factory.—The Crystal Showcase & Mirror Co. has been incorporated under Delaware laws for the manufacture of showcases and mirrors; capital stock \$500,000. Francis S. Garp is interested.

Cumberland—Dyeing Plant.—Thomas Foster & Son are erecting a three-story addition to their dyeing establishment.

Easton—Factory.—Joseph B. Harrington, proprietor of the Easton Creamery, has installed a plant for making dried curd, which is used in the manufacture of buttons.

Elkton—Foundry.—The Elkton Foundry Co., in which Dr. Chas. M. Ellis, George McQuilken and J. F. Powers are interested, will soon begin the erection of a foundry.

Elkton—Granite Quarries.—The Consolidated Granite Co., composed of New York capitalists, has purchased 300 acres of land in Cecil county and will open granite quarries, installing about \$50,000 worth of machinery.

Hagerstown—Textile Plant.—Milford Schindel and M. L. Martin have secured building and installed machinery for mercerizing cotton with capacity of 1000 pounds per week. They will organize a company and manufacture the product on a large scale.

Havre de Grace—Electric Company.—The Havre de Grace Electric Co. has been incorporated for the promotion of electric-light or gas companies, construction of water-works, manufacture of ice, construction of telephone systems, etc.; capital stock \$50,000; incorporators, John H. Record, David B. Record, Henry H. Record and others.

Ichester—Dam.—The Thistle Mills Co. has awarded contract to Jacob Kirn for construction of another dam to furnish water-power for operating the additional machinery installed recently. This second dam will use the water that has passed the first dam.

Salisbury—Knitting Mill.—The Suffolk Knitting Co. of Suffolk, Va., is investigating with a view to establishing a branch factory in Salisbury; fifty machines will be installed.

Washington, D. C.—Crematories.—The Washington Chemical Co. has been incorporated to collect and dispose of the garbage of cities, with Myron M. Parker, president; John F. Wilkins, vice-president; E. S. Parker, treasurer, and Louis Beyer, Jr., secretary; capital stock \$100,000.

## MISSISSIPPI.

Meridian—Lumber Company.—The Consumers' Lumber Co. has been organized for the purpose of buying and selling lumber. Address W. W. Lewis.

## MISSOURI.

Cartersville—Mining.—Chartered: The Pittsburg & Cartersville Milling & Mining Co., with capital stock of \$32,000, by W. I. Nevin, R. P. Nevin, W. H. Herriford and others.

Carthage—Abstract Company.—The Jasper County Abstract Co. has been chartered, with capital stock of \$25,000, by C. B. Campbell of Carthage, G. G. Farwell and C. W. Farwell of Joplin.

Glover—Lumber Company.—Chartered: The Scroggin Lumber Co., with capital stock of \$10,000, by G. W. Scroggin, Allison Tims, W. L. Scroggin and others.

Joplin—Mining.—The Eagle Mining Co. has been incorporated, with capital stock of \$50,000, by W. F. Thomas, S. E. Hubbard, R. B. Blair and others.

Joplin—Abstract Company.—Chartered: The Joplin-Carthage Abstract Co., with capital stock of \$100,000, by W. H. Shephard, J. W. Gray, G. W. Read and others, all of Carthage.



**Joplin—Lead and Zinc Lands.**—The Joplin Zinc and Lead Union has been incorporated, with principal office in New York, by Joseph H. Schlund of Chicago, Henry F. Albers, John N. Mattock, Chauncey Mattock and Abner A. Griffing of New York. The capital stock is \$250,000.

**Prosperity—Mining.**—The Boston Get There Mining Co. has been incorporated, with capital stock of \$250,000, for the development of mines in Missouri.

**Richmond—Lumber Company.**—The Richmond Lumber Co. has been incorporated, with capital stock of \$5000, by S. H. Strieby, B. F. Green, A. C. Cook and others.

**St. Joseph—Tailoring.**—Chartered: The Mayer Tailoring Co., with capital stock of \$5000, by M. A. Mayer and others.

**St. Louis—Chartered:** The Great Western Coffee & Tea Co., with capital stock of \$5000, by A. H. Freeman and others.

**St. Louis—Improvement.**—Chartered: The St. James Realty & Improvement Co., with capital stock of \$25,000, by A. Gehner, E. Wainwright, A. H. Good and others.

**St. Louis—Range Works.**—The Wrought Iron Range Works has been chartered, with capital stock of \$1,000,000.

#### NORTH CAROLINA.

**Charlotte—Gold Mine.**—W. D. Rock of Richmond, Va.; J. H. Strongman of Boston, Mass., and G. W. Strongman of Washington have purchased the Ellwood gold mine, near Charlotte, and will develop on a large scale.

**Charlotte.**—H. C. Dresser and J. J. Farnan have formed a partnership as Dresser & Farnan for conducting a mill engineering and equipment business.

**Durham—Hosiery Mill.**—The Durham Hosiery Mill, J. S. Manning, president, will increase its capital stock from \$200,000 to \$500,000 and double capacity.

**Elmwood—Saw-mill.**—Chester & Steele will rebuild their burned saw-mill.

**Franklin—Mica Mines.**—G. A. Munch of Detroit, Mich., has purchased the mica-mining property of the Detroit Mica Mining Co., known as Lyle Knob, as reported recently. New machinery will be installed and the mine developed on an extensive scale.\*

**High Point—Cotton Mill.**—The Carolina Manufacturing Co. has been chartered by W. H. Ragan, J. W. Harris, J. A. Lindsay and Chas. Ragan, for the manufacture of cotton goods; capital stock \$10,000.

**North Wilkesboro—Cannery.**—Smook & Son have incorporated for the establishment of a cannery; capital stock \$2000.

**Rocky Mount—Cotton Mill.**—The Rocky Mount Mills, operating 27,000 spindles, is installing additional machinery.

**Rocky Mount—Machine Shop.**—The Atlantic Coast Line has awarded contract to Zachary & Zachary of Raleigh to build machine shop at South Rocky Mount at a cost of \$18,000; J. R. Kenly, general manager, Wilmington, N. C.

**Scotland Neck—Machine Shop.**—T. H. Hollingsworth will establish a machine shop.

**Statesville—Flour Mill.**—The Statesville Milling Co. has been incorporated, with capital stock of \$50,000, for building a 400-barrel flour mill, by F. A. Sherrill, J. C. Irvin and C. L. Poston.

**Wadesboro—Cottonseed-oil Mill and Ginnery.**—W. T. Brasington, Jas. W. Brasington, Robert Lampley and others have formed the Anson Oil & Ginning Co. for the establishment of a ginnery of thirty bales per day capacity and a 20-ton cottonseed-oil mill.

**Waynesville—Lumber Mill.**—The Waynesville Wood Manufacturing Co. has been incorporated, with capital stock of \$25,000, by J. A. Cleverage of Asheville, S. H. Keller and H. M. Peel of Waynesville.

**Whitsett—Furniture and Broom Factory.**—The Clapp-Faust Manufacturing Co. is installing machinery for the manufacture of brooms and furniture.

**Winston-Salem—Fertilizer Factory.**—The Southern Chemical Co. is enlarging its factory, increasing capacity about 75 per cent.; improvements include new sulphur furnace and additional machinery.

**Winston-Salem—Cotton and Woolen Mill.**—H. W., F. H. and H. E. Fries of Salem, G. L. Dull, Charles Shelton, W. H. Turner and others have incorporated the Wachovia Mills Co., with capital stock of \$20,000, and privilege of increasing to \$50,000. The cotton and woolen mill now owned by F. & H. Fries at Salem will be removed to Winston and enlarged; buildings will be erected and the mill operated by electricity.

#### SOUTH CAROLINA.

**Alken—Flour Mill.**—P. K. Livingston will operate a flour mill.

**Charleston—Paper-box Factory.**—Frank Q. O'Neill and Jonathan Lucas have incorporated the Riverside Paper-Box Factory, with capital stock of \$15,000, for the manufacture of paper boxes, bags, etc.

**Darlington—Oil Mill and Ice Factory.**—The Darlington Oil & Ice Manufacturing Co. has been chartered, with capital stock of \$30,000, by Charles E. Borden of Richmond, Va.; C. S. McCullough, L. S. Welling, John Siskron and C. H. Hewitt of Darlington.

**Orangeburg—Machine and Repair Shops.**—The Orangeburg Machine and General Repair Shops has been established; W. C. Wise, general manager.\*

#### TENNESSEE.

**Bristol—Candy Factory.**—A. M. Barden and H. F. Lewis have established a candy factory.

**Chattanooga—Foundry.**—The Chattanooga Steel Roofing Co. has drawings completed for a new foundry plant. It was reported last week to increase capacity.\*

**Chattanooga—Medicine Factory.**—The Thatcher Company is having plans prepared for the erection of a three-story brick and stone medicine factory to cost \$10,000.

**Chattanooga—Electrotype Foundry.**—F. W. Baum of Philadelphia, Pa., contemplates establishing an electrotype foundry in Chattanooga.

**Chattanooga—Acetylene Gas Burner, etc., Factory.**—The Crescent Novelty Manufacturing Co. has organized and established a plant for manufacturing acetylene gas burners, lava gas tips and a number of other articles. The company is operating in the Posey Block on Carter street, and will in the near future build a factory.

**Clarksville.**—J. F. Gahan and R. M. Duval of Adrian, Mich., representing the National Seed & Grain Separator Co., are investigating with a possible view of locating a factory in Clarksville for the manufacture of a machine for separating weed seeds, etc., from grain. The above parties are at the Arlington Hotel, Clarksville.

**Fayette County—Cooperage.**—The Southern Cooperage Co. of Brownsville, recently established with George T. Nolly, president, will remove to Fayette county, where it has purchased 11,000 acres of timber.

**Gallatin—Phosphate Mines.**—The Sumner Phosphate Co. has purchased and will develop 500 additional acres of phosphate lands.

**Jacksonboro—Coal Company.**—The Italian Blue Green Coal Co. has been incorporated for mining coal and manufacturing coke by P. Zechin, R. B. Baird, H. A. E. Parsons and others; capital stock \$10,000.

**Liberty—Insulator-pln. Factory.**—P. H. Mangum and W. P. Mangum have organized the Mangum Locust Pine Manufacturing Co. and established an insulator-pln. factory.

**Memphis—Refrigerating Plant.**—Oliver Finley Grocery Co. has awarded contract for a six-ton refrigerating machine.

**Paris—Brake Company.**—The Climax Automatic Brake Co., reported recently as incorporated, will establish a factory for the manufacture of brakes.\*

**Union City—Sewerage System.**—Hall & George of Clarksville, Tenn., have contract with Union City for the engineering work in the designing and supervision of the erection of its contemplated sewerage system.

#### TEXAS.

**Abilene—Cattle Company.**—The Black Mountain Cattle Co. has been incorporated, with capital stock of \$100,000, by Otto W. Stefens and others.

**Athens—Ice Plant.**—McDonald & Howell have awarded contract for a six-ton ice plant.

**Corsicana—Oil Wells.**—Garrity & Mills (oil producers) awarded contract to Tom Woods and P. M. Lea for drilling thirty oil wells east of the city.

**Corsicana—Oil and Gas Wells.**—The Amalgamated National Petroleum Co. has been incorporated, with capital stock of \$50,000, to develop oil and gas lands, by C. C. Walton, S. S. Freedman, A. C. Sloan and others.

**Beaumont—Lumber Company.**—The United Lumber & Export Co. has been incorporated, with capital stock of \$50,000, by L. I. Parmenter, William Negley, George A. Dascomb and others.

**El Paso—Publishing.**—Chartered: The El Paso Publishing Co., with capital stock of \$20,000, by Felix Martinez, O'Brien Moore, John Sneed and others.

**El Paso—Mercantile.**—Chartered: The Leon Sweeney Company has been incorporated, with capital stock of \$10,000, by J. W. Levy, Joseph H. Goodman, E. E. Levy and others.

**Galveston—Furniture Factory.**—Secretary

Fishburn of the Chamber of Commerce is corresponding with Tennessee parties relative to the establishment of a \$35,000 furniture factory in Galveston.

**Harleton—Lumber Company.**—The R. W. Grogan Lumber Co. has been chartered, with capital stock of \$30,000.

**Henrietta—Cheese Factory.**—The Clay County Cheese Co. has been incorporated, with capital of \$3000, to manufacture cheese, butter, etc., by Paul Andrews, H. B. Patterson, F. P. Neville and Marlin Putty.

**Huntsville—Canning Company.**—The Huntsville Canning Co. has been chartered, with capital stock of \$2500, by C. H. Robinson, C. S. Barrett, W. S. Hibbs and others.

**Nacogdoches—Telephone System.**—The Texas Gulf Telephone Co. has been incorporated, with capital stock of \$10,000, by E. C. Branch, George H. Davidson, K. P. Branch and W. S. Beeson.

**New Braunfels—Ice Plant.**—Joseph Landa has awarded contract for a 10-ton ice plant.

**Palestine—Coal Mines.**—President Grainier of the Palestine Coal & Mining Co. has discovered new coal vein near Palestine, and will sink shafts immediately.

**Royse City—Corn Mills, Cotton Compresses, etc.**—The Royse City Cotton Co. has been incorporated, with capital stock of \$100,000, to construct corn mills, gins, cotton compresses and warehouses, by C. H. Robinson, C. S. Barrett, W. S. Hibbs and others.

**Sherman—Ice Plant.**—The Sherman Packing Co. has awarded contract for a 25-ton refrigerating plant.

**Timpson—Electric-light Plant.**—J. D. Todd and son are establishing an electric-light plant.

**Waco—Bridge.**—The city has voted to build a \$100,000 bridge across the Brazos river, as recently reported. Address J. W. Riggins, mayor.\*

**Wills—Lake.**—The International & Great Northern Railroad Co. will build a lake at Wills covering seventeen acres of land; Leroy Trice, general superintendent, Palestine, Texas.

#### VIRGINIA.

**Basic City—Mining.**—It is rumored that English and New York capitalists are organizing a \$2,000,000 company for the purpose of turning out Bessemer pig-iron from the ores of Alleghany, Rockbridge and Augusta counties; to begin operations with two furnaces.

**Claremont—Buggy Factory.**—J. A. Johnson and Fred Sharp are erecting a buggy factory, two stories, 24x40 feet.

**Cook—Buckwheat Mill.**—Dr. E. M. Wilkinson will install buckwheat huller, as reported lately.\*

**Lambert's Point—Pier.**—Regarding the pier reported recently to be built at Lambert's Point by the Norfolk & Western Railway Co., L. E. Johnson of Roanoke, Va., general manager, says that the company is having a plan prepared for the new pier at Norfolk; that the work has not been arranged for, and is still a matter under consideration.

**Louisa—Telephone System.**—The Louisa Telephone Co., reported incorporated, has lines already in operation which it is at present extending.

**Lynchburg—Bakery.**—The Virginia Biscuit Co. has been incorporated, with G. G. Dean, president and general manager; I. H. Adams, Jr., vice-president, and Sidney Strother, secretary and treasurer; capital stock \$50,000.

**Lynchburg—Bakery.**—The Virginia Biscuit Co. has been incorporated for the manufacture of crackers and cakes, with F. G. Dean, president; I. H. Adams, Jr., vice-president; Sidney Strother, secretary and treasurer; capital stock is \$50,000. A new building, three stories, will be erected and two ovens installed, each with capacity of seventy-two pans, each pan 22x36 inches.

**Lynchburg—Moose Bros. Company** has been incorporated, with capital stock of \$20,000, to succeed Moose Bros. & Co., booksellers, manufacturers of shades, window frames, etc. G. F. Moose is president; O. B. Barker, vice-president; W. R. Moose, secretary.

**Norfolk—Chartered:** The Norfolk, Newport News & Old Point Terminal Co., to conduct general warehouse and wharfage business; capital stock is from \$10,000 to \$50,000. D. Lowenberg is president; H. L. Lowenberg, vice-president; Caldwell Hardy, treasurer, and Willington Hardy, secretary.

**Norfolk—Sound Recording Company.**—The Johnson Sound Recording Co. has been incorporated, with capital stock of \$30,000 to \$100,000, for the manufacture of records of sounds, machinery and tools for the reproduction of sound and plants for the manufacture of same. Griffin C. Calhoun is president; Wm. H. Friol, vice-president, and W. E. Stokes, secretary, all of Philadelphia, Pa.

**Richmond—Repair Shops.**—The Seaboard Air Line Railway Co., John Skelton Williams, Richmond, Va., president, will establish repair shops at Richmond.

**Richmond—Abattoir.**—The Union Stock Yards Co. and the Pace Pork Packing Co. will probably be absorbed by Northern capitalists and operated as one concern. S. Henry Skilton of Boston, Mass., is interested.

**Richmond—Steel Plant.**—It is rumored that Boston capitalists are negotiating for the establishment of a \$2,000,000 steel plant in Richmond.

**Staunton—Telephone System.**—The Virginia Long Distance Telephone Co. has been organized for the construction of long-distance telephone lines, etc., by James R. Kemper (president) of Fishersville, J. S. Cochran of Foley Mills, J. W. Sims of Louisa, W. H. Laughlin, Edward Echols, Andrew Bowling, Frank M. Hanger and Newton C. Watts of Staunton. Capital stock is to be not less than \$20,000 nor more than \$100,000.

**Warwick Court House** (not a postoffice)—Sawmill.—Uriah and Charles Phillips of Pottsville, Pa., have purchased 1000 acres of land near Warwick Court House and will build a saw-mill.

#### WEST VIRGINIA.

**Charleston.**—Chartered: The Railroad Advertiser & Station Indicator Co., by H. B. Smith, G. E. Price, H. L. Slounery and others.

**Dego—Coal Mines, etc.**—W. A. MacCorkle, W. E. Chilton, J. E. Chilton, T. S. Clark and J. E. Scaggs, all of Charleston, W. Va., have incorporated the Macomah Coal & Land Co., the Hope Coal & Land Co. and the Phoenix Coal & Land Co. for the development of coal lands on Paint creek. The capital stock of each company is \$100,000.

**Flemington—Coal Mines and Coke Ovens.**—The Flemington Coal & Coke Co., principal office New York city, has authorized the issuance of \$500,000 of new stock to build new coke oven and open up another part of its mine. The output of the company has been increased from about 600 tons per day to 1000 tons.

**Huntington—Industrial.**—Chartered: The West Virginia Industrial Co., with capital of \$820, by Nelson Barnett, C. H. Barnett, T. W. Wade, L. D. Jones and others.

**Marlington—Lumber Mill.**—It is reported that the Greenbrier River Lumber Co. is establishing a saw-mill with capacity of 100,000 feet of lumber per day to cost \$30,000; company said to own 35,000 acres of timber lands in Pocahontas and adjoining counties.

**Wheeling—Coal Mining.**—The Empire Coal Mining Co. has been incorporated, with authorized capital of \$5,000,000, for mining coal, manufacturing coke, etc., by Alfred S. Carr, Clark A. Mabon and J. B. Summerville of Wheeling, William Weixel of Allegheny, Pa., and others.

#### BURNED.

Hammond, La.—June Bros.' dry-kilns.

#### BUILDING NOTES

**Anniston, Ala.—Cottages.**—Woodstock Cotton Mills let contract to S. C. Houser and Watsoncroft for erection of seventeen operatives' cottages.

**Anniston, Ala.—Warehouse, etc.**—The Anniston Warehouse & Storage Co. has been organized by Lowery Mallory and others.

**Baltimore, Md.—Hotel Improvements.**—The proposed improvements to the Carrollton Hotel, previously reported, includes the reconstruction of a part of the building, renovating the steam-heating plant, installation of an electric-light plant and the remodeling and re-equipment of the kitchen. For further particulars address N. S. Hill, manager.

**Baltimore, Md.—Buildings.**—W. H. Brune will erect ten brick dwellings to cost \$13,500. The trustees of Johns Hopkins University will erect a four-story building to cost \$5000.

**Baltimore, Md.—Theater.**—P. B. Chase of Washington, D. C., will make extensive improvements to the Lyceum Theater.

**Baltimore, Md.—Warehouse.**—A. S. Herens will erect a brick warehouse 55x56 feet to cost \$8000.

**Baltimore, Md.—Custom-house.**—The new custom-house (mention of which was made lately) will contain four elevators, and the interior will be finished in marble. Cost is to be about \$1,200,000.

**Beaumont, Texas—Church.**—The Methodist congregation will build a new church.

**Bennettsville, S. C.—Jail.**—Bids will be received by "Board of County Commissioners" for Marlboro county for erection of a new



residence jail until August 18. Bidders required to submit plans and specifications; cost not to exceed \$7000; \$5000 bond required and usual rights reserved. Address D. J. Easterling, county supervisor.

Birmingham, Ala.—Building.—The People's Home Telephone Co. will erect a four-story building to cost \$10,000.

Birmingham, Ala.—Hotel.—T. H. Molton is president, and M. V. Joseph, secretary and treasurer, of the Hotel Hillman Company, reported lately organized for erection of 250-room hotel; company has purchased site for \$50,000; architect for drawing plans, etc., has not been selected. Address the president.

Birmingham, Ala.—Residence.—Evans Bros. will build a two-story frame residence to cost \$9500.

Camden, S. C.—Cotton-mill Building.—T. C. Thompson & Bros. of Birmingham, Ala., have contract for erecting \$50,000 mill building at Camden for DeKalb Cotton Mills.

Carrollton, Ga.—Church.—The Second Baptist congregation will build a new brick church.

Chattanooga, Tenn.—Apartment-house.—J. C. Conn has awarded contract to W. T. Jones for erection of proposed two-story brick apartment-house; cost \$2900.

Chattanooga, Tenn.—Dwellings.—Frank Rees awarded contracts to erect five two-story, 10-room brick dwellings. W. B. Swaney has awarded to W. T. Jones contract to erect a 12-room brick tenement-house to cost \$3000. Mrs. A. W. Chambliss will award contract for building two dwellings.

Columbus, Ga.—Warehouse.—Kern & Loch will erect a large warehouse.

Columbus, Ga.—Cotton-mill Building.—Bibb Manufacturing Co. awarded contract for its new mill building to the J. R. Smiling Co. of Macon, Ga.

Cumberland, Md.—Church.—John S. Siebert is preparing plans for a stone and brick church 34x70 feet for the Ebenezer Baptist congregation; it will be heated by steam, direct radiation, with gravity system of ventilation; estimated cost \$5000.

Fairfield, Va.—Church.—The building committee, F. P. C., Fairfield, Va., will receive bids for labor and material in contemplated improvement of the Fairfield Presbyterian Church, in accordance with plans and specifications, which can be seen at office of N. B. McCluer, Fairfield, or R. A. Marr, engineer, Lexington, Va.

Greenwood, Miss.—School.—J. F. Barnes of Greenville, Miss., has contract at \$17,444 for erection of school building at Greenwood.

Hapeville, Ga.—Orphanage.—Memorial cottage to cost \$5000 will be built by Georgia Baptist Orphans' Home.

Key West, Fla.—Armory Building, etc.—County commissioners will receive plans and specifications until September 6 for an armory building, two stories, of brick, with stone trimmings, 60x80 feet, to cost \$15,000; also for school building to be of same material as armory to accommodate 800 pupils and to cost \$20,000; no heating appliances for either building. Usual rights reserved. For information address George W. Reynolds, county clerk.

Louisville, Ky.—Infirmary.—C. A. Curtin has made plans for addition to Gray Street Infirmary.

Marlin, Texas.—Hotel.—M. Levy will receive sealed proposals until July 3 for the erection of a four-story-and-basement stone and brick hotel building, in accordance with plans and specifications, which may be seen at his office in Marlin, or of Herbert & Allen, architects, in Waco. All bids must be accompanied by certified check for \$500. Usual rights reserved.

McGregor, Texas.—Bank Building.—The Citizens' National Bank, recently organized, will erect a building.

Mobile, Ala.—Warehouse.—The Southern Log Cart & Supply Co. will rebuild portion of its warehouse recently burned, and in doing so will probably remodel building; no plans have been made.

Mt. Sayage, Md.—Office Building.—The Union Mining Co. is having plans made by John S. Siebert of Cumberland, Md., for a one-story stone and terra-cotta office building 36x47 feet; it will be heated by steam and have slate roof and galvanized-iron cornice.

Newport, Ky.—Crematory.—The city will build a crematory. Address "The Mayor."

Portsmouth, Va.—Church.—Court Street Baptist Church will build a \$15,000 structure; Rev. R. B. Garrett, pastor.

Rockledge, Fla.—School Building.—A high-school building will be erected to cost \$2400. Address W. L. Hughlett.

Terrell, Texas.—Building.—W. E. Craddock, president W. E. Craddock Grocery Co., will

receive proposals until June 30 for erection of two-story brick building in accordance with plans and specifications, which may be seen at Harris National Bank; size of building to be 85x115 feet. All bids must be accompanied by certified check for \$500. Usual rights reserved.

Thomas, W. Va.—Station.—The West Virginia Central Railroad Co. will build a brick and stone station, heated by steam, etc., after plans by John S. Siebert of Cumberland, Md.

Thomas, W. Va.—Store Building.—The Buxton & Landstreet Company will erect a store building 100x120, two stories, to cost \$25,000.

Waco, Texas.—Courthouse and Jail.—McLennan county will build a \$250,000 courthouse and jail. Address Judge J. N. Gallagher.

Waco, Texas.—Hotel.—D. Mahoney of Waxahachie, Texas, has contract at \$25,000 for remodeling the Pacific Hotel at Waco, not including heating, wiring or plumbing.\*

Washington, D. C.—Apartment-house, etc. Mary DeW. Brennerman is building a four-story stone and red-brick apartment-house after plans of C. L. Harding. Edward F. Droop is having plans made for a four-story brick and stone apartment-house 50x100 feet. Theodore F. Jewell will build residence after plans by W. B. Wood. George S. Cooper is preparing plans for an apartment-house for L. S. Fristoe, to be five stories, 48x140 feet.

## RAILROAD CONSTRUCTION

### Railways.

Abingdon, Va.—It is reported that the Virginia-Carolina Railway has been nearly graded from Abingdon to the State line between Virginia and Tennessee, a distance of seventeen miles. It is also understood that the company contemplates an extension eight miles long to the mills of the Empire Lumber Co. in Tennessee. Tracklaying is to begin about July 1. W. E. Mingea at Abingdon is one of the promoters of the road.

Birmingham, Ala.—D. Bontecou of Kansas City, Mo., chief engineer of the Kansas City, Fort Scott & Memphis Railroad Co., informs the Manufacturers' Record that a preliminary survey has been made for the branch line in Alabama recently referred to, but that its construction is still undecided.

Camden, S. C.—It is expected that the railroad now under construction between Sumter and Camden will be completed by August 1. Additional contracts have recently been made. Thomas Wilson of Wilson, S. C., is president of the company.

Centerville, Md.—It is reported that a syndicate has purchased what is known as Love Point, at the northern extremity of Kent Island, and will operate a steamboat line from Baltimore in connection with a railroad to be built from Love Point to Queens-town and Centerville. It is calculated that the railroad will be about sixteen miles long.

Dallas, Texas.—It is reported that the Texas & Pacific Railroad Co. has determined to relay a considerable mileage of its track between Texarkana and El Paso with heavier rails, and has already purchased the necessary steel for the purpose. L. S. Thorne at Dallas is vice-president of the company.

Fairmont, W. Va.—The Fairmont & Suburban Railway Co. has been formed to build a proposed electric line between Fairmont, Scottsdale and other towns in Marion and Harrison counties. The company is capitalized at \$1,000,000. Among those interested are S. L. Watson of Fairmont and James P. Adams of Wheeling.

Fulton, Ky.—It is stated that the Illinois Central Railroad Co. has determined to construct an extra track between Fulton and Cairo, Ill., a distance of fifty miles, and that grading operations have already begun. David Sloan at Chicago is chief engineer.

Hammond, La.—S. L. Ballard has been appointed chief engineer of the Baton Rouge, Hammond & Gulfport Railroad, and has begun surveys between Baton Rouge and Hammond. W. R. Watson of Amite City, La., is president of the railroad company.

Harris, Ky.—The Frankfort & Cincinnati Railroad Co. is considering an extension of its line from Paris into Morgan county, a distance of eighty miles. The line is now in operation between Frankfort and Paris, a distance of forty miles. H. P. Mason at Frankfort is president of the company.

Hollins, Ala.—It is reported that the railroad to be built by the Sample Lumber Co., recently referred to in the Manufacturers' Record, will be an extension of the Hollins, Heflin & Sylacauga road now in operation between the towns mentioned. John L. Kaul is president of the railroad company. The extension would make the total length of

the line thirty-six miles. C. D. Smith & Co. of Birmingham have the contract for the extension.

Kansas City, Mo.—The surveys are now being made for the section of the Kansas City, Mexico & Orient Railroad to be built in Texas. The promoting company in Texas will be called the Panhandle & Gulf Railway Co. A. E. Stilwell of Kansas City is president.

Knoxville, Tenn.—It is reported that the Southern Railway Co. has determined to construct additional freight-yards at Lonsdale at a cost of \$150,000. W. H. Wells at Washington is chief engineer.

La Follette, Tenn.—It is stated that the Tennessee Northern Railroad Co. has decided to build branches which will aggregate about six miles in length, to reach mineral property which it controls. J. L. Stamps at Knoxville, Tenn., has secured the contract for the extension. H. M. La Follette is vice-president of the railroad company.

Langley, S. C.—T. J. Southall writes the Manufacturers' Record that the Paragon Railroad will be about one mile long, and that no contracts will be let.

McKinney, Texas.—A committee of business men has been appointed to promote the proposed railroad from McKinney into Collins county. They include J. S. Heard and J. P. Burns.

Nashville, Tenn.—Mr. J. W. Thomas, Jr., general manager of the Nashville, Chattanooga & St. Louis Railroad, writes the Manufacturers' Record that no decision has been reached relative to the proposed branch near Hermitage.

Newberne, N. C.—James A. Bryan, president of the Atlantic & North Carolina Railroad Co., advises the Manufacturers' Record that the branch to Snow Hill is now under consideration, but that a decision has not as yet been reached.

Newberne, N. C.—A correspondent of the Manufacturers' Record writes that the question of building a railroad from Newberne to Rayboro is under consideration, but that nothing definite has been done as yet to carry out the project.

Norfield, Miss.—It is stated that the Natchez, Columbia & Mobile Railroad Co. has decided to build an extension about three miles in length, and has begun construction work. C. S. Butterfield at Norfield is general manager.

Riderville, Ala.—It is reported that the Welch's Mill & Centreville Railroad may be extended to Marion, Ala., and that the business men of Marion are negotiating with the company to secure the extension.

Sherman, Texas.—It is reported that the St. Louis & San Francisco Railroad Co. has finally determined to extend the line now under construction from Denison to Sherman and to establish its principal offices in Texas at Sherman. The extension is being built from Sapulpa, I. T., to Sherman. D. B. Robinson at St. Louis is president of the company.

Vidalia, La.—The Louisiana Railway Co. has been formed to build a line from Vidalia to a point on the Red river at Nantaches. W. L. Whitaker, Sr., is president; W. M. Tully, vice-president, and J. H. Smelser, secretary and treasurer.

Warren, Texas.—The proposed extension of the Warren & Corsicana Pacific Railroad, which has been completed between Warren and Campwood, a distance of eighteen miles, is to be 150 miles in length. J. I. Campbell at Warren is president, and I. L. Campbell, general manager.

Westminster, Md.—The latest report concerning the Washington, Westminster & Gettysburg Railroad is to the effect that contracts will be let in a few weeks to build this line, which is to extend from Rockville, Md., to Gettysburg, Pa., by way of Westminster, Md., a distance of seventy-eight miles. James B. Colegrove of Washington is one of the principal promoters.

Winnsboro, S. C.—The plan to build a railroad line between Winnsboro and Camden has reached a point where a company is being organized under the title of the Winnsboro & Camden Railway Co., to be capitalized at \$300,000. The road, if built, will form a connection of the Seaboard Air Line, and will be thirty miles long. Thomas K. Elliott is among those interested.

### Street Railways.

Chattanooga, Tenn.—The Chattanooga Rapid Transit Co. is desirous of extending its electric line along King and other streets in the city, and has applied for a franchise. S. W. Divine is president of the company.

Irontdale, Ala.—A company which includes A. Turpin has secured a franchise to build an electric street railway in connection with other enterprises.

Little Rock, Ark.—A correspondent of the Manufacturers' Record writes that the company which now controls the franchise of the street railroad in Little Rock has offered the city a bonus of \$15,000 and a percentage on the net earnings for thirty years. If a new charter is granted the company proposes making a number of improvements to the line at a cost of about \$80,000. Mrs. Jas. R. Miller has also offered the city \$10,000 and a percentage on the net earnings for a franchise. Mrs. Miller intends building a line if she gets the franchise.

## Machinery, Proposals and Supplies Wanted.

**Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.**

Bag Machinery.—See "Textile Machinery."

Barrel Manufacturers.—N. P. Pratt Laboratory, Atlanta, Ga., R. S. McDonald, secretary, is in need of a constant supply of sugar barrels, and would like to correspond with manufacturers.

Barrel-stave Machinery.—See "Woodworking Machinery."

Bobbin Machinery.—Key & Co., Statesville, N. C., want names of manufacturers of machinery for making bobbins.

Boiler.—The Burton Cotton Oil Mill, Thos. Watson, secretary and treasurer, Burton, Texas, wants 80-horse-power boiler.

Boiler and Engine.—S. C. Starr, Barnes, Fla., wants to buy 25-horse-power boiler and 20-horse-power engine, new or second-hand.

Boiler and Engine.—Peacocks Iron Works, Selma, Ala., is in the market for a 60-horse-power stationary engine and 70-horse-power tubular boiler, either new or second-hand.

Boilers and Engine.—T. T. Wolfender, superintendent Traders' Cotton Oil Co., Union Springs, Ala., is in the market for two 72 inches by 18 feet or two 72 inches by 16 feet or two 66 inches by 18 feet tubular boilers, and one 16x36 Corliss engine which will develop 125 or 140 horse-power, new or second-hand.

Brake-works Machinery.—Climax Automatic Brake Co., Paris, Tenn., will want to buy machinery for its works.

Brick Machine.—Jas. Armstrong, Gastonia, N. C., is in the market for second-hand brick machine, horse-power.

Bridge.—J. W. Riggins, mayor, Waco, Texas, desires information, etc., on the construction of a \$100,000 bridge across the Brazos river.

Buckwheat Machinery.—Dr. E. M. Wilkinson, Cook, Va., wants to purchase a buckwheat huller.

Building Materials.—D. Mahoney, Waxahachie, Texas, is in the market for oak finish.

Building Materials.—John Stephen Sewell, lieutenant, engineers, 735 North Capitol street, Washington, D. C., will receive separate sealed proposals for cut stone, common bricks, light-colored face bricks, red pressed bricks, select red hand-made bricks, Portland cement, sand, broken stone, broken bricks, cast-iron door and window frames, miscellaneous iron castings, lumber, ornamental terra-cotta, enameled iron pipe, terra-cotta conduit, iron armored conduit, flexible iron conduit, cut-out boxes, porcelain cut-outs, C-S switches and switch boxes. Proposals opened July 18. Information furnished on application.

Cotton Compress.—Mathis Reeder & Co., Columbus, Miss., wants addresses of manufacturers of hydraulic hand presses for packing cotton.

Cotton Gins.—S. C. Starr, Barnes, Fla., wants to buy two gins to gin long-staple cotton.

Distillery.—J. L. Morgan, Marion, N. C., wants to buy a distillery outfit of 100 bushels capacity.

Dyke.—W. E. Cutshaw, city engineer, City Hall, Richmond, Va., will receive sealed proposals until June 30 for the crib and stone work in building a dyke along the harbor line of James river. Certified check for \$3000 must accompany each bid. Forms of pro-



posals, drawings, specifications, explanations and conditions can be seen at office. Usual rights reserved.

Dynamite.—See "Mining Equipment."

Electrical Machinery.—See "Foundry Equipment."

Electrical Machinery.—Catawba Furniture Co., Marlon, N. C., wants a second-hand dynamo, about fifty lights.

Electric-light Plant.—See "Water-works."

Engine.—See "Oil Mill."

Engine.—H. Etheridge, Saluda, S. C., wants a small upright engine mounted on boiler, second-hand, from two to five horse-power.

Engine.—S. H. Merryman, Towson, Md., wants a two or three-horse-power gasoline engine.

Excavating.—Sealed proposals will be received at the United States Engineer Office, Vicksburg, Miss., until June 28 for excavating 7,500,000 cubic yards of earth, more or less. Information furnished on application.

Fertilizer Machinery.—See "Oil Mill."

Flour Mill.—See "Buckwheat Machinery."

Flour Mill.—See "Water-works."

Foundry Equipment.—Chattanooga (Tenn.) Steel Roofing Co. wants prices on cupolas, cranes and blowers; also air compressors and compressed-air tools; also on dynamos.

Furniture.—The "Nashville School Directors" wish to buy furniture, desks, etc., for schoolhouse. Address W. G. Sadler, Box 325, Nashville, Tenn.

Gasoline Engine.—See "Engine."

Heating Apparatus.—Sealed proposals will be received until June 30 at office of Henry R. F. Macfarland, John W. Ross and Lansing H. Beach, commissioners, District of Columbia, Washington, D. C., for constructing a hot-air or hot-blast steam-heating apparatus, with mechanical ventilating appliances combined with each system, for an eight-room school building. Blank forms of proposals and information obtained upon application at office of inspector of buildings, and bids upon these forms only will be considered. Each bidder will submit plans and specifications for the system proposed. Usual rights reserved.

Hydraulic Press.—See "Oil Mill."

Knitting Mill.—Robert Boucher, 114 E. Las Animas street, Colorado Springs, Colo., wants addresses of manufacturers of knitting machines and supplies.

Laundry Machinery.—C. J. Cox, Asheville, N. C., wants prices on new and second-hand laundry machinery.

Lumber.—See "Woodworking Machinery."

Machine Tools.—See "Foundry Equipment."

Machine Tools.—See "Brake-works Machinery."

Machine Tools.—Orangeburg (S. C.) Machine and General Repair Shops wants second-hand lathe to swing twelve to fourteen inches, about six or eight feet long, with chuck, gears, face plates, rest and cross-feed; also other machinery.

Machine Tools.—Preposals will be received at bureau of supplies and accounts, A. S. Kenny, paymaster-general, United States Navy, Navy Department, Washington, D. C., until July 3 to furnish at navy-yard, Portsmouth, N. H., machine tools. Blank proposals furnished upon application to navy-yard, Portsmouth.

Machine Tools.—W. A. Andrews, Opelika, Ala., needs a spoon bit or hollow auger for boring turned columns sixteen feet long; wants prices on boring outfit complete or to work on a wood lathe.

Mining Equipment.—G. A. Munch, Detroit, Mich., will want later on to purchase additional steam drills, tool steel, dynamite, electrical fuses, ore cars, stamp or punch presses for punching mica; also picks, shovels, etc.

Mining Machinery.—Richard Lamb, No. 1 Broadway, New York city, will purchase considerable machinery for copper mining.

Oil Mill.—Ozark Cottonseed Oil Mill & Fertilizer Co., L. W. Kolb, secretary, Ozark, Ala., will want cottonseed-oil and fertilizer machinery.

Oil Mill.—Florence Oil Mill, Florence, S. C., wants second-hand storage tanks for oil, hydraulic press and a 100-horse-power Corliss engine.

Oil Mill.—H. H. Milam, secretary Euharlee Farmers' Club, Euharlee, Ga., wants prices on complete equipment for 20-ton cottonseed-oil mill.

Paving.—Sealed proposals addressed to "City Council of Augusta, Ga.," will be received by the street and drains committee until July 5 for furnishing all labor and material and laying approximately 1200 yards of vitrified brick paving. A bond of \$1000 will be required and certified check for \$100

with each proposal. Usual rights reserved. Specifications can be had by applying to the office.

Plating Machinery.—D. W. Branch & Co., Montgomery, Ala., want addresses of manufacturers of and dealers in machinery for plating gold, silver, nickel, etc.

Railway Equipment.—H. A. Rankin, Atkinson, N. C., is in the market for a light tram engine for three-foot gauge wood rail; second-hand preferred.

Railway Equipment.—E. A. Poe, Fayetteville, N. C., is in need of a small lot of 16-pound second-hand rails, with fastenings.

Tanks.—See "Oil Mill."

Textile Machinery.—Key & Co., G. E. French, secretary and treasurer, Statesville, N. C., want addresses of manufacturers of machinery for making seamless cotton bags.

Water-works.—J. R. Leguene, mayor, Abbeville, La., desires correspondence relative to the construction of a system of water-works.

Water-works.—The Citizens' Water & Power Co., Joseph B. Royle, secretary, Westminster, Md., will want to purchase machinery for water-works, electric-light plant, flour mill, etc.

Water-works.—Contract will be awarded July 2 for constructing the proposed system of water-works at St. Michaels, Md., recently reported; usual rights reserved; G. H. Benson, clerk. Specifications furnished on application to Chas. S. York, engineer, 1526 East Biddle street, Baltimore.

Well.—Office of depot quartermaster, 807 Equitable Building, Baltimore, Md., will receive sealed proposals in triplicate until June 29 for furnishing all material, machinery and work for sinking one six-inch tubular deep well at Fort Carroll, Maryland. Necessary blanks and all information on application.

Well drilling.—Sealed proposals will be received at office of mayor, Hyattsville, Md., until July 6 for boring deep well or wells to furnish a water supply. Blank forms of proposals and specifications will be furnished on application; usual rights reserved; Clarence N. Walker, clerk town council.

Wood-extract Machinery.—Benj. Thompson, Cement, Ga., wants information and prices on machinery and appliances used in making wood extracts.

Woodworking Machinery.—See "Bobbin Machinery."

Woodworking Machinery.—J. F. Weathers & Bro., Columbus, Ga., want estimates on all kinds of kiln dried lumber, machinery, etc.

Woodworking Machinery.—Berry Tobacco Co., Bedford City, Va., wants addresses of manufacturers of machinery for making barrel staves.

## TRADE NOTES.

Spencer Miller Abroad.—Spencer Miller, chief engineer of the Lidgerwood Manufacturing Co.'s cableway department, will sail June 23 for Europe, accompanied by Mrs. Miller. He goes abroad in the interests of his recent invention for coaling warships at sea.

Perforated Metal Orders.—On Monday of last week the Robt. Altchison Perforated Metal Co. of Chicago received in its first mail orders from Vermont, Utah, Minnesota and Louisiana. This clearly demonstrates that the company is well known from one end of the country to the other.

Oil Filters for Mexico.—The popularity of the "Cross Oil Filters" increases constantly, and orders for them come to the manufacturer from all parts of the world. A recent order was from a large copper works at Saltillo, Mexico, to equip an entire plant. The Burt Manufacturing Co. of Akron, Ohio, makes the filters.

G. W. Drury, Bridge Builder, etc.—Companies and individuals requiring at times the erection of bridges or other structural iron and steel work are invited to confer with G. W. Drury of York, Pa., when contemplating the letting of contracts. Mr. Drury represented the Wrought Iron Bridge Co. of Canton, Ohio, for some years, but recently severed his connection with that company, and is now with the York Bridge Co. at York, Pa. The large experience that Mr. Drury has had in his line makes his services especially valuable, and, as above stated, those about to let contracts should confer with him.

Ice Machines for Honolulu.—American manufacturers of machinery are constantly scoring triumphs by furnishing mechanical apparatus to distant countries. This is especially noticeable in the line of ice and refrigerating machines. For instance, the

York (Pa.) Manufacturing Co. just closed contract to ship a 75-ton cross compound condensing refrigerating machine and a 10-ton ice-making plant to the Hawaiian Electric Co. of Honolulu. The electric company's general manager signed the contract with the York firm after an extensive trip through the United States examining different makes of ice machinery. Among other recent contracts obtained by the York Manufacturing Co. was a 50-ton can ice-making plant for erection at Long Island City, N. Y.; 25-ton refrigerating plant at Sherman, Texas, and 10-ton can ice-making plant at Apalachicola, Florida.

Towing in Rough Water.—The rough bars on the Pacific coast make towing frequently a most difficult work. Automatic mechanical devices are, however, coming into use to overcome the difficulties met with, and the American Ship Windlass Co. of Providence, R. I., receives strong letters referring to the efficient duty its Shaw & Spiegler steam-towing machine accomplishes. A letter from Astoria, Ore., this month to the company says in part: "I take pleasure in testifying to the great efficiency of your automatic steam-towing machine in towing barges built like a ship's hull of 1500 tons capacity and loaded to seventeen feet. These barges are taken across the Columbia river bar and Gray's Harbor bar, about thirty-five miles of coast towing, crossing each bar twice going and coming. On May 19 the tug and her barge came out. The bar was rough and the tug could be seen to leap out of the water, her whole hull in the air, while the barge was like a half-tide rock, the breakers going all over her with a force that is only known to those who battle with rough bars on this coast. Without the automatic towing device such work could never be accomplished. Something must give when a heavy tug falls in such a sea and the barge butts into one at the same time."

Refrigerating Perishable Commodities.—The refrigeration of perishable commodities by means of machinery is an invention of modern times that has been of great benefit to the people. Not only has this invention facilitated the operations of those engaged in handling perishable products, but also has assisted in maintaining and improving the community's health. The construction of machinery for refrigerating purposes has been, in its most approved and satisfactory development, the work of American machinists and inventors. Throughout the entire country plants for refrigerating purposes are constantly being installed, and the A. H. Barber Manufacturing Co. of Chicago, Ill., being a pioneer in this branch, has booked a large number of the contracts. The company's most recent installations included a six-ton plant in Arkansas, a 10-ton plant in Maryland, seven-ton plant in Iowa, three-ton plant in Missouri, five-ton plant in Iowa, six-ton plant in Tennessee, 10-ton plant in Massachusetts, three-ton plant in Tennessee, 16-ton plant in Illinois, eight-ton plant in New York, six-ton plant in Alabama, six-ton plant in Texas, seven-ton plant in Georgia. The products to be cooled by these plants included meats, vegetables, chocolates, milk, butter, fish, etc. The company also shipped a three-ton plant to Mexico.

They Recommend It Highly.—Founders, ironworkers and other manufacturers having use for forges are invited to investigate the merits of the "Re Down-Draft Forges" built by the Buffalo Forge Co. of Buffalo, N. Y. The following extracts from recent letters received by the Buffalo Company will show what some users think of this forge. Verity Plow Co. of Brantford, Canada, says: "They have given very best satisfaction. Our shop is entirely free from smoke and gas, and we consider this style of forge very much in advance of the overhead draft." Superintendent of New York State Reformatory says: "There is no comparative statement to be properly made as between the down-draft and the overhead method of smoke removing. The down-draft is most efficient and satisfactory." Peoria & Pekin Railway Co.'s master-mechanic says: "I consider the down-draft system to be superior to the overhead method of removing smoke and gases. This system makes it cooler for the men, as the draft of air carries the heat away from the men and down under ground." Kitson Machine Co. of Lowell, Mass., says: "Well pleased with system of down-draft forges furnished by you two years ago. We have had no trouble with smoke from our blacksmith shop since their adoption."

To Make Cold-Water Paint.—Throughout the entire country there is a constantly increasing use being made of cold-water paint. Because of the introduction of this article many who heretofore failed to paint certain

outbuildings are utilizing the cold-water paint. The latter's cheapness as compared to oil paint mainly brought about this utilization, and for both interior and exterior use it has been found, when properly compounded, to give an efficient service much more than commensurate with its cost. Many manufacturers supply cold-water paint, but consumers frequently obtain the necessary ingredients and mix their own. The ingredients are readily procured, so that one may at once realize the advantages and economy of this method. The simplicity and readiness with which cold-water paint is prepared will appeal especially to large corporations, such as railroads. It is those who now mix or may contemplate mixing their own cold-water paint who will find of interest the statement of the Quaker City Chemical Co. of Philadelphia, Pa. (postal station R). This company is manufacturing what is known as "Casein," a requisite for paint manufacturers. This "Casein" is used to prevent settling and to improve the durability of ready-mixed paints; it improves adhesive qualities and produces a firm, elastic water-proof coating; it replaces glue, and is both clean and odorless. The company will promptly furnish further particulars to inquirers.

Inexpensive Paint and Coating.—The sales of Lythite, especially the white, are constantly increasing throughout the South among the large factories, as well as in the farming districts. Farmers who have heretofore neglected painting their outbuildings on account of the cost of oil paint are now using Lythite, from which they obtain for their purpose as good results as with the best oil paint, and at 75 per cent. less cost, the maker states. The demand for Lythite has caused the manufacturer to more than double capacity, and further enlargements will be made. For sanitary work, coating walls and ceilings of hospitals, sanitariums, public institutions, etc., "National Wall Coating" is meeting with a ready sale. This is an efficient and sanitary cheap coating. It has a large covering capacity, is made in twelve handsome tints and pure, lustrous white, and possesses the fireproof properties of Lythite. On application the maker will furnish the names of prominent concerns throughout the South who have successfully used these goods. While these goods are handled at many agencies, additional pushing and energetic people are wanted to act as representatives. Messrs. Peden & Co. of Houston, Texas; Kansas City Roofing & Corrugating Co., Kansas City, Mo.; Adams & Elting Co. of Chicago and others who started handling Lythite and National Wall Coating in a small way have met with the same success in their special territory which the maker has met all over the country. The Frank S. De Ronde Co. of 52 John street, New York, manufactures these two coatings.

New Era in Cement Industry.—Builders, architects, engineers and other consumers of Portland cement will be interested in the prediction that a new era in the cement industry is about to be inaugurated in this country. This development is to be produced by the establishment of an extensive cement works at Nazareth, Pa. The plant is about completed, and will soon be marketing a cement guaranteed to be better than the best imported cement. It is confidently believed this new cement will become the Dyckerhoff of America, and it will be guaranteed to stand tests which manufacturers of even the best foreign cements cannot guarantee. Dexter Portland cement is of a beautiful bluish color, free from yellowish blotches or discolorations. It is of uniform quality, very finely ground, sound, reliable and of the greatest strength compatible with soundness and permanence. It is particularly suited for pavements and heavy concrete work. The entire cement plant and equipment is designed after the latest approved practice and mechanical advantages of both this country and Europe, and the raw materials used will come from deposits recently discovered and now being opened in the Lehigh district, which latter furnishes probably three-fourths of the Portland cement made in the United States. The Dexter Portland Cement Co. has been organized and established the plant herein referred to, the members of the corporation including men who have had many years' experience in manufacturing and handling cement in the United States. Mention of the principal interested members of the new company will indicate to the trade and to consumers the nature of the character which this new enterprise will maintain. George E. Barrett, formerly president of the Alpha Portland Cement Co., and now president of the Philadelphia (Pa.) Bourse, is president; William B. Newberry, formerly superintendent of the Alpha Company's plant, will be chemist and technical director, while Howard B. French



of Samuel H. French & Co., Philadelphia, will be largely interested. Samuel H. French & Co. of Philadelphia, Pa., will handle the Dexter cements.

### TRADE LITERATURE.

**Concerning Lubrication.**—The subject of lubrication is an interesting one to operators of many kinds of machinery. The most approved modern ways and means of lubricating machinery tend to produce that efficient and economical operation that is the desire of every careful manager. Improvements in design of automatic lubricators and in the quality of their workmanship keep such devices in the front rank of specialties. The Detroit (Mich.) Lubricator Co. has been manufacturing lubricators for more than twenty years, and they have become known extensively as embodying all that such a device is expected to be. The company's 1900 catalogue is of interest to machinery users. If the reader is in that class send for a copy of the book.

**Boiler Inspirators, etc.**—The Hancock Inspirator Co. has issued a new catalogue devoted to the well-known "Hancock Inspirator," of which it is the sole manufacturer, for stationary, marine and portable boilers. All the various types are illustrated and described in detail, and much additional data of value is furnished in directions for connecting and operating, and price-lists, which latter it has been found necessary to revise, owing to the introduction of new goods. The book also shows the Hancock ejector, "Loftus" automatic injector, Hancock hydrocarbon burner, Hancock purge apparatus, Hancock shaking grate, valves and general jet apparatus. Copies of catalogue may be had upon application at office, 85 Liberty street, New York.

**Secor System for Generating Power.**—The generation of power for the thousands of purposes for which it is used presents to operators many difficult questions. The introduction of gas engines in recent years has been the means of solving many problems for power users, and the advantages of gas engines as prime movers are well known. Yet an expert claims there are limitations which materially detract from the utility of the gas engine, such as the necessity for a special fuel, frequently not obtainable. The requirements of a successful motor are stated to be that it be capable of using some low-cost fuel that is everywhere obtainable (kerosene being such a fuel); that it always be reliable in operation, and that its mechanism be equal to the best steam engine. The General Power Co. of 100 William street, New York city, claims that it has the ideal motor in the machine which it builds after the Secor patents, and it confidently offers these machines to the public, believing that it is an internal combustion engine better fitted for universal use than any other existing motor. The company's booklet has a complete exploitation of the Secor system, together with illustrations, and the interesting treatise should be perused by every present or prospective user of power. Applicants will be supplied on request.

**Belt Conveyors.**—There are a number of prominent American builders of machinery who are taking advantage of the Paris Exposition to exploit the merits of their apparatus. Conveying machinery in its many forms has entered largely into industrial life, and those who design and construct this class of mechanical equipment have been among the foremost manufacturers of the world during this century. Belt-conveying machinery has been a favorite method of construction, and the use of this type is constantly being extended, and probably the exhibits at Paris will assist to a marked degree in even more widely extending the installations of such equipment. The Robins Conveying Belt Co. of New York, office in Park Row Building, manufactures a conveying equipment that is the result of ten years of continuous experimenting, of successive improvements in all parts, and of various adaptations to special fields of usefulness. Extreme simplicity and large capacity are two important features of the Robins belt conveyor. The company has issued a booklet descriptive of its system and illustrating different portions of the equipment it furnishes. The booklet will be issued especially for distribution at the Paris Exposition, where the Robins Company has exhibits. The introduction calls attention in English, French and German to the Robins exhibits.

**Of Unusual Interest to Railway Officials, Financiers and Engineers.**—There has just come off the press an illustrated book that is of unusual interest to officials of electrical railways, financiers and engineers. This pamphlet contains a reproduction of the

paper read at the New York meeting of the American Society of Mechanical Engineers last December by Walter C. Kerr, an electrical engineer widely and favorably known in his profession. The subject of the paper is the mechanical equipment of the New South Station at Boston, which was designed, constructed and equipped by Messrs. Westinghouse, Church, Kerr & Co., of which firm Walter C. Kerr is a member. The publication presents with clearness and accuracy a subject that railway officials, financiers and engineers will find to interest them to a marked degree. The entire subject is subdivided under headings that include power-house, interlocking switch and signal system, electric plant, heating and ventilating, disposal of drainage from waterproof structure, roof drainage, ice-making, refrigeration and water-cooling plants, car-heating in train sheds and yards, air-brake charging, steam and hot-water supply to head-house, fire protection, and elevators, baggage and express lifts. The Westinghouse Companies' publishing department at Pittsburg, Pa., has issued the book, from whom professional men may obtain a copy on request.

**About Steam Pumps.**—The requirements of duplex steam pumps are well known to users. Conditions, of course, vary and pumps of high-grade manufacture are changed and modified to properly proportion them for specific duties. A recent catalogue shows a line of pumps as will ordinarily meet the requirements of duplex pump service, and refers to the manufacture of any pattern necessary. The Gardner Governor Co. of Quincy, Ill., issues this catalogue, and states that its line embodies all the essentials of high-grade pumps, viz., good materials, best workmanship, substantial construction and superior finish. The company's facilities have been greatly enlarged recently, and it is better prepared than ever to supply buyers with promptness, and as to satisfaction, the many years' record of the Gardner duplex steam pumps is a sufficient guarantee of that. The Gardner pumps are always subjected to severest tests under varying pressures and speeds before shipped, and every pump is fully guaranteed. Present and prospective users are invited to send for catalogue. In it will be found, besides the above machines, descriptions and illustrations of valves, governors, feeders, pressure regulators, air compressors, etc., all of Gardner manufacture. A quantity of interesting information, such as areas of circles, figures on friction of water in pipes, valuable data on water, etc., will be found in the catalogue.

**For Lovers of the Sea.**—Vacation, pleasure and health resorts may come and go, but those located by the seaside will go on forever. The sea always retains that popularity which it develops with those who once become enamored of its delights, they finding at its side a freshness and charm which other classes of resorts fail to furnish. All along the Atlantic coast are resorts that have been frequented by holiday and health seekers for years, enjoying studying the restless, never-ending changes of the sea. The wholesome, pure and invigorating air lightens the heart, while sea-bathing gives that exhilarating sensation remembered as a pleasurable experience for a long time. To Marylanders the famous Rehoboth Beach should prove a "Mecca." It is only four miles from Baltimore, two of which are spent on the beautiful Chesapeake bay and two on the rail through a country that is richly cultivated, dotted with pretty villages, and possesses that natural aspect which conveys a rare charm to the beholder. Each season thousands wend their way to this Atlantic coast resort and enjoy the many pleasurable experiences that develop through such a journey. The various recreations of outdoor exercise that include fishing, sailing, rowing and kindred delights to suit varying tastes may be found at Rehoboth in abundance. The steamer Queen Anne, which takes the traveler across the bay, has every convenience for the comfort, pleasure and safety of her passengers, while the railway also is of the modern type, giving the same advantages. The low rates for trips to Queens-town for an afternoon's outing or for the entire journey to Rehoboth Beach should appeal to many. The Queen Anne's Railroad Co. operates the steamboat and railway line to Rehoboth Beach, and will send interesting booklet to parties desiring information. Address Wm. D. Uhler, general passenger agent, Pier 10, Light street, Baltimore, Md.

*If you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send the Manufacturers' Record a postal card giving the character of the machinery needed.*

## PHOSPHATES.

### Phosphate Markets.

Office Manufacturers' Record,  
Baltimore, Md., June 27.

The volume of business in phosphate rock shows some expansion, and as in other fertilizer ingredients, the demand is better. Fertilizer manufacturers are disposed to purchase in larger quantities to satisfy immediate and future necessities. Values continue to rule steady, and sales of Tennessee and South Carolina rock are reported at quoted figures. Charters to load rock at the various ports are not numerous, the principal ones reported for the week being the British steamer Laura, 1804 tons, to load Florida phosphate rock at Savannah for Hamburg at 20¢; steamer Oaklands, 1252 tons, from a Southern port to United Kingdom or Continent with phosphate rock on private terms, and steamer James Turpie from a Southern port to United Kingdom on same terms. The various reports from the Southern phosphate belt continue encouraging, the output in all sections being readily taken for shipment to domestic and foreign markets. In South Carolina the industry is in a satisfactory shape, with considerable domestic trade and a light foreign demand. Values are generally steady. The development in Florida is rather better than usual, with investors purchasing valuable territory for development and miners generally improving their plants. Shipments from the ports of both land rock and river pebble continue fairly active. At Mt. Pleasant, Tenn., the situation is improving, and miners are working more successfully, with more laborers offering their services. The past three months has been rather quiet at all the mines, and withal the shipments in May last from the Hickman county, Maury county, Williamson and Davidson county mines aggregated 6976 tons, all to interior points. Prices are nominally steady at \$2.25 to \$2.50 for 76 to 72 per cent. rock, \$2.75 to \$3 for 75 per cent. f. o. b. Mt. Pleasant.

### Fertilizer Ingredients.

The market for ammoniates shows considerable improvement, with a much stronger tone. The recent movement of tankage has imparted much more strength to prices. The fish catch in Chesapeake bay is reported very unsatisfactory so far. In nitrate of soda values are steady. Sulphate of ammonia is quiet, with prices firm.

The following table represents the prices current at this date:

Sulphate of ammonia (gas).....	\$2 72/100	2 75
Nitrate of soda.....	1 80	1 85
Blood.....	2 10	2 15
Azotine (beef).....	2 20	2 25
Azotine (pork).....	2 20	2 25
Tankage (concentrated).....	1 85	1 90
Tankage (9 and 20).....	2 05 & 10¢	2 10 & 10
Tankage (7 and 30).....	18 00	18 50
Fish (dry).....	22 00	23 00

### Florida Phosphate News.

[Special Cor. Manufacturers' Record.]

Ocala, Fla., June 25.

The unprecedented rains of the past ten days have flooded many of the mines, and the owners have been forced to close them down until the water recedes. There has been very little activity in phosphate matters for the past month. The market is still very slow, and the miners do not feel encouraged over the outlook, and do not anticipate much better prices before the first of the year. There will be a demand, however, for most of the rock removed this month, on account of the comparatively few plants in operation from the various causes. The State board of health has made vaccination compulsory among the negro miners, and the enforce-

ment of the same has laid many of them off temporarily.

C. C. Todd has purchased the fine plant and deposit of phosphate at Saw Grass, near Archer, from Hood & Hubbard.

### Phosphate and Fertilizer Notes.

It is stated that the Virginia Chemical Co. has sold its interest in the phosphate plant at Darlington, S. C.

The Consolidated Phosphate Co. of Fort Ogden, Fla., has been making a number of improvements in its plant. The most recent is the erection of new office buildings.

It is stated that the total shipments of phosphate rock from the Mt. Pleasant district in Tennessee for the month of May, 1900, aggregated 69,803,100 pounds, as per report of the Louisville & Nashville Railway.

It is reported in Gallatin, Tenn., that the Sumner Phosphate Co. has made a new deal, and that it will start 500 men to work at once. The Gallatin Phosphate Co. has made a good contract for the sale of rock, and will begin the erection of a number of sheds and cabins at once.

The movement of Tennessee phosphate rock from the various stations on the N. C. & St. Ry. and connections for the month of May were as follows: Hickman county mines, 2415 tons; Maury county mines, 2628 tons; Williamson county mines, 627 tons; Davidson county mines, 1306 tons, making a total of 6976 tons, all to interior points.

**Telephone Information.**—The rapidly-increasing installations of telephone systems throughout the entire country is causing an earnest study and thorough examination of the telephonic science by electricians. The Ericsson Telephone Co. of 296 Broadway, New York, has issued in its part 4 of the "Ericsson Series" much information about circuits of metallic switchboard that cannot fail to be of interest and value to telephone men. The pamphlet is in convenient form for reference and future use. Copies will be furnished gratis to applicants.

**Steam Pumps.**—The use of the steam pump is world-wide, and it enters into the equipment of numerous manufacturing establishments. Various forms and applications are used in such factories, and many kinds of material are handled by the pumps. The "Dean Bros. Duplex Steam Pump" is of a form that has been in use so long that the valve mechanism is now familiar to most mechanics. The simplicity of its theory and its practical application obviate the necessity of devoting space to its consideration. Suffice it to state that the Dean Bros. pump is built of the very best material obtainable by the highest skilled workmen, and that its efficiency, economy and durability are extensively known to users. The Dean Bros. Steam Pump Works of Indianapolis, Ind., manufactures this pump, and has issued a new catalogue, descriptive and illustrative of it as built for different services. Manufacturers or other industrial operators requiring a pump in their business are invited to examine the merits of the Dean before placing orders.

### Atlantic City Special—Through Vestibule Fast Express Train to and from Atlantic City Every Week-Day via Pennsylvania Railroad.

Beginning with train leaving Baltimore Friday, June 29, and ending with train leaving Atlantic City Monday, September 3, 1900, the Pennsylvania Railroad Co. will run the Atlantic City Special, a through fast express train, every week-day between Baltimore and Atlantic City via the Delaware River Bridge Route, the only all-rail line, on the following schedule:

Leave Baltimore 2.10 P. M.; Wilmington, 3.33; Chester 3.51. Arrive Atlantic City 5.30 P. M.

Leave Atlantic City 2.30 P. M. Arrive Chester, 4.08; Wilmington, 4.28; Baltimore, 5.55 P. M.

This train will be composed of Pullman vestibule buffet parlor cars, vestibule combined car and Pennsylvania Railroad vestibule coach, and will not stop at Philadelphia in either direction.



## FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

## New Corporations.

The Citizens' National Bank has been organized at McGregor, Texas.

It is reported that local business men may organize a bank at High Springs, Florida.

The Citizens' Bank has been organized at Honea Path, S. C., with \$25,000 capital, by J. A. Brock, James L. Orr and others.

The Standard Building and Loan Association, recently organized at Charleston, S. C., has secured a charter. R. G. Rhett is president.

N. J. Miller is president, and John M. Williams, vice-president, of the bank recently organized at Mt. Vernon, Ky., and capitalized at \$25,000. It will begin business about September 15.

The Central Banking & Security Co., recently organized at Parkersburg, W. Va., has secured a charter. It is capitalized at \$100,000. The company includes W. A. Smith and S. B. Baker.

## New Securities.

It is understood that the State of Texas will purchase the issue of \$20,500 of the bonds of Irion county for the school fund.

The Second National Bank of Chestertown, Md., has purchased \$20,000 worth of 5 per cent. bonds of Kent county, Maryland, paying 111.66.

St. Louis investors have purchased the issue of \$100,000 in 4 per cent. bonds of Marion county, Missouri, the price ranging from 103.895 to 104.91.

The Southern Railway Co. will redeem the issue of \$3,123,000 in 7 per cent. bonds of the East Tennessee, Virginia & Georgia Railroad, maturing on July 1.

T. F. Briggs of Cincinnati, Ohio, has purchased an issue of refunding bonds of Gallatin county, Kentucky, at par. The bonds bear 4 per cent. interest.

An issue of \$30,000 in receivers' certificates has been authorized to be made by the Rapid Transit Company of Austin, Texas, to erect a new power-house.

The Kansas City Southern Railway Co. has given a mortgage to secure a bond issue to the extent of \$30,000,000 to the Mercantile Trust Co. of New York.

Bids will be received until July 16 for the issue of \$12,000 in 6 per cent. improvement bonds of Port Gibson, Miss. The mayor will give further particulars.

Noxubee county, Mississippi, will place on the market an issue of \$20,000 in 5 per cent. bonds. J. W. Deupree, county treasurer, may be addressed at Macon, Mississippi.

The Arkansas Company of Lester, Ark., has given a mortgage to the Union Savings & Trust Co. of Cincinnati as trustee for \$250,000 to secure a bond issue for this amount.

Bids will be received until July 7 for \$10,000 in school bonds of the Kirkwood district, Missouri. The bonds will bear interest at 4 per cent. Henry W. Hough at Kirkwood may be addressed.

A sale of \$50,000 in bonds of Clark county, Virginia, has been made to the Second National Bank of Cumberland, Md., on a basis of 4 per cent. The issue will refund a similar amount of 5 per cent. bonds outstanding.

## Dividends and Interest.

The New Orleans Gaslight Co. has declared a dividend of \$2.50 per share.

The Consolidated Gas Co. of Baltimore

has declared an extra dividend of 2½ per cent.

The Canal Bank of New Orleans, La., has declared a dividend of 3 per cent.

The National Bank of Augusta, Ga., has declared a semi-annual dividend of 3 per cent.

The Norfolk & Western Railway Co. announces a quarterly dividend of 1 per cent.

The New Orleans National Bank has declared a semi-annual dividend of \$15 per share.

The Firemen's Insurance Co. of Baltimore has declared a semi-annual dividend of 4 per cent.

The National Tube Co. has declared a quarterly dividend of 1¼ per cent. on its preferred stock.

The Edison Electric Co. of Savannah, Ga., has declared a semi-annual dividend of \$3 per share.

The Louisville Railway Co. of Louisville, Ky., has declared a quarterly dividend of 1 per cent.

The New Orleans Street Railroad Co. has declared a dividend on its preferred stock of \$2.50 per share.

The Bank of Port Gibson, Miss., has declared a dividend of 8 per cent. and added 8 per cent. to its surplus fund.

The Savannah Bank & Trust Co. of Savannah, Ga., has declared a semi-annual dividend of \$3 per share.

The Planters' Loan and Savings Bank of Augusta, Ga., has declared a semi-annual dividend of 3½ per cent.

Interest on bonds of the State of Maryland due July 1 will be paid at the Merchants' National Bank of Baltimore.

Interest on loans of the city of Baltimore due July 1 will be paid by the Citizens' National Bank, the Merchants' National Bank, the National Mechanics' Bank, the Farmers and Merchants' National Bank and the National Exchange Bank. The amount due aggregates \$478,553.

The following dividends are announced by Richmond corporations: Richmond, Fredericksburg & Potomac Railroad Co., \$4 per share; Metropolitan Bank, 2½ per cent. semi-annual; State Bank of Virginia, 3½ per cent.; Security Bank, 2½ per cent. semi-annual; Merchants' National Bank, 3½ per cent. semi-annual; City Bank, 3 per cent. semi-annual; Virginia Insurance Co., 3 per cent. semi-annual; Virginia Trust Co., 3 per cent. semi-annual; Planters' National Bank, 6 per cent. semi-annual; Richmond Loan & Trust Co., \$1 per share semi-annual; Virginia Fire Insurance Co., 4 per cent. semi-annual; Union Bank, 6 per cent. semi-annual; Granite Building Co., 3 per cent. semi-annual; German-American Banking & Building Co., 3 per cent. semi-annual.

## Financial Notes.

The stockholders of the Southern Bank of Savannah, Ga., have decided to secure a renewal of the charter from the secretary of State.

Isadore Newman of New Orleans, it is understood, has offered to loan the city of Birmingham, Ala., about \$270,000, taking as security 5 per cent. bonds.

The finance commissioners of Baltimore have purchased \$50,000 worth of 6 per cent. stock of the Western Maryland Railroad of the issue which matures January 1, 1902.

## SOUTHERN COTTON-MILL STOCKS

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending June 26.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.)	101	103½
Aiken Mfg. Co. (S. C.)	96	100
Anderson Cotton Mills (S. C.)	126	130
Arkwright Mills (S. C.)	122	126
Augusta Factory (Ga.)	85	90
Avondale Mills (Ala.)	80	82
Belton Cotton Mills (S. C.)	105	106½
Bennettsville Mfg. Co. (S. C.)	115	117½

Cannon Mfg. Co. (N. C.)	165	200
Clifton Mfg. Co. (S. C.)	195	198
Courtenay Mfg. Co. (S. C.)	118	120
Darlington Mfg. Co. (S. C.)	100	101
Delgado Mills (N. C.)	102	103½
Dilling Cotton Mills (N. C.)	109	114
Eagle & Phenix Mills (Ga.)	107	110
Enoree Mfg. Co. (S. C.)	123	130
Enterprise Mfg. Co. (Ga.)	103	105
F. W. Poe Mfg. Co. (S. C.)	134	140
Gaffney Mfg. Co. (S. C.)	130	133
Granby Mills (S. C.)	100	101½
Graniteville Mfg. Co. (S. C.)	168	170
Greenwood Cotton Mills (S. C.)	102	105
Grendel Mills (S. C.)	103½	105
Henderson Cotton Mills (N. C.)	120	125
Henrietta Mills (N. C.)	210	220
Indian Head Mills (Ala.)	101	101
John P. King Mfg. Co. (Ga.)	105	107
Laurens Cotton Mills (S. C.)	145	151
Langley Mfg. Co. (S. C.)	116	120
Lockhart Mills (S. C.)	110	112
Loray Mills (N. C.)	99	100
Lynchburg Cotton Mill Co. (Va.)	125	130
Lynchburg Cot. Mill Co. (Va.) Pfd.	145	150
Mills Mfg. Co. (S. C.)	94	100
McColl Mfg. Co. (S. C.)	125	130
Modena Cotton Mills (N. C.)	140	150
Newberry Cotton Mills (S. C.)	122	125
Odel Mfg. Co. (N. C.)	115	120
Orr Mfg. Co. (S. C.)	104	105½
Pacolet Mfg. Co. (S. C.)	260	260
Pelzer Mfg. Co. (S. C.)	194	198
Piedmont Mfg. Co. (S. C.)	194	198
Raleigh Cotton Mills (N. C.)	122	130
Richland Cotton Mills (S. C.)	100	102
Ronoke Mills (N. C.)	108	111
Southern Cotton Mills (N. C.)	100	101
Spartan Mills (S. C.)	135	145
Trion Mfg. Co. (Ga.)	125	150
Union Cotton Mills (S. C.)	132	135
Union Cotton Mills (S. C.) Pref.	101	104
Victor Cotton Mills (S. C.)	114	117
Warren Mfg. Co. (S. C.)	85	90
Warren Mfg. Co. (S. C.) Pref.	102	105½
Wilmington Cot. Mills (N. C.) Pref.	110	115
Wiscasset Mills (N. C.)	120	125

Quotations Furnished by William S. Glenn, Spartanburg, S. C., for Week Ending June 27.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.)	100	103
Clifton Mfg. Co. (S. C.)	195	200
F. W. Poe Mfg. Co. (S. C.)	120	125
Gaffney Mfg. Co. (S. C.)	130	135
Laurens Cotton Mills (S. C.)	145	151
Lockhart Mills (S. C.)	110	114
Odel Mfg. Co. (N. C.)	115	118
Pacolet Mfg. Co. (S. C.)	265	260
Pelzer Mfg. Co. (S. C.)	192	196
Piedmont Mfg. Co. (S. C.)	193	196
Spartan Mills (S. C.)	135	---
Tucapau Mills (S. C.)	132	---
Union Cotton Mills (S. C.)	133	137
Whitney Mfg. Co. (S. C.)	130	135

## Reduced Rates to Kansas City via Pennsylvania Railroad.

For the National Democratic Convention, to be held at Kansas City July 4, the Pennsylvania Railroad Co. will sell excursion tickets to Kansas City from all stations on its line at rate of one first-class fare for the round trip. Tickets to be sold and good going July 1, 2 and 3, and to return until July 9, inclusive. These tickets will be good on all trains except the Pennsylvania Limited, and must be used for continuous passage. †

## Chautauqua—Low-Rate Excursion via Pennsylvania Railroad.

On July 6 the Pennsylvania Railroad Co. will run a special excursion from Baltimore to Chautauqua, N. Y. Special train will start from Harrisburg at 11.35 A. M. Connecting trains will leave Baltimore 8.55 A. M. Round-trip tickets, good to return on regular trains not later than August 4, will be sold at rate of \$10 from Baltimore, and at proportionate rates from other stations.

For specific rates and time of connecting trains apply to nearest ticket agent or B. Courlander, Jr., P. A. B. D., northeast corner Baltimore and Calvert streets, Baltimore. †

## Summer Tours to the North—Two Tours to Canada via Pennsylvania Railroad.

For the summer of 1900 the Pennsylvania Railroad Co. has arranged to run two personally-conducted tours to Canada and Northern New York. These tours will leave July 21 and August 11, including Niagara Falls, Thousand Islands, Rapids of the St. Lawrence, Quebec, The Saguenay, Montreal, Au Sable Chasm, Lakes Champlain and George, and Saratoga, occupying fifteen days; round-trip rate, \$125.

Each tour will be in charge of one of the company's tourist agents, assisted by an experienced lady as chaperon, whose especial charge will be unescorted ladies.

The rate covers railway and boat fare for the entire round trip, parlor-car seats, meals en route, hotel entertainment, transfer charges and carriage hire.

For detailed itinerary, tickets or any additional information address B. Courlander, Jr., P. A. B. D., northeast corner Baltimore and Calvert streets, Baltimore, or Geo. W. Boyd, Assistant General Passenger Agent, Broad Street Station, Philadelphia. †

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## Reduced Rates to Charleston, S. C., via Pennsylvania Railroad.

For the meeting of the National Educational Association at Charleston, S. C., July 7-13, the Pennsylvania Railroad Co. will sell excursion tickets from all stations on its lines to Charleston at the rate of one fare for the round trip, plus \$2. Tickets to be sold July 6 to 9, inclusive, and to be good to return until September 1, inclusive. On the return trip stop-over will be allowed at Washington on deposit of ticket with Joint Agent and on payment of fee of \$1. †

## Atlantic City Special to Run Every Week-Day via Pennsylvania Railroad.

The Pennsylvania Railroad Co. has arranged to run the "Atlantic City Special," the through fast express train between Washington, Baltimore and Atlantic City, every week-day during the coming season, instead of Saturdays and Mondays, as last year.

The train will be placed in service on June 29, and will consist of standard vestibule coaches and Pullman buffet parlor cars. It will leave Baltimore 2.10 P. M., running via the Delaware River Bridge Route, and arrive Atlantic City 5.30 P. M. Returning, it will leave Atlantic City at 2.30 P. M. and arrive Baltimore 5.55 P. M. The train will be continued in service until September 1.

The addition of this train will give the residents of Baltimore the best train service between those points and Atlantic City ever enjoyed. †